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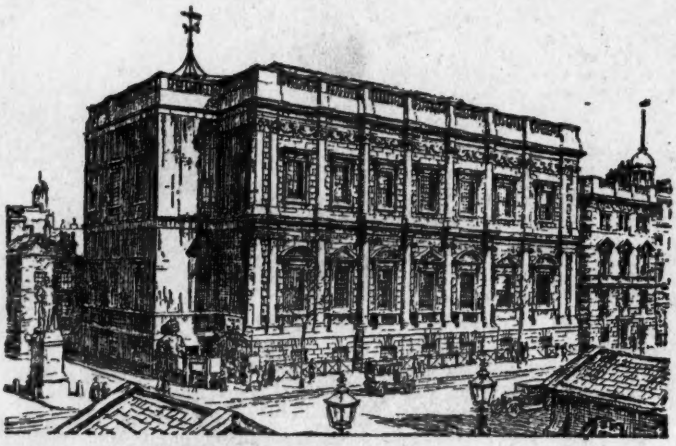

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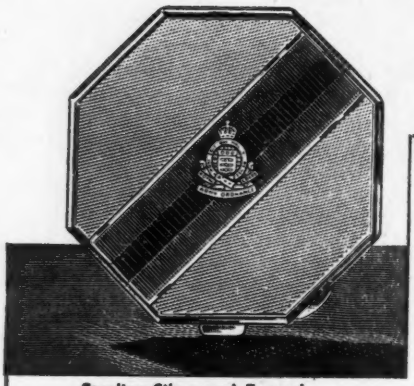

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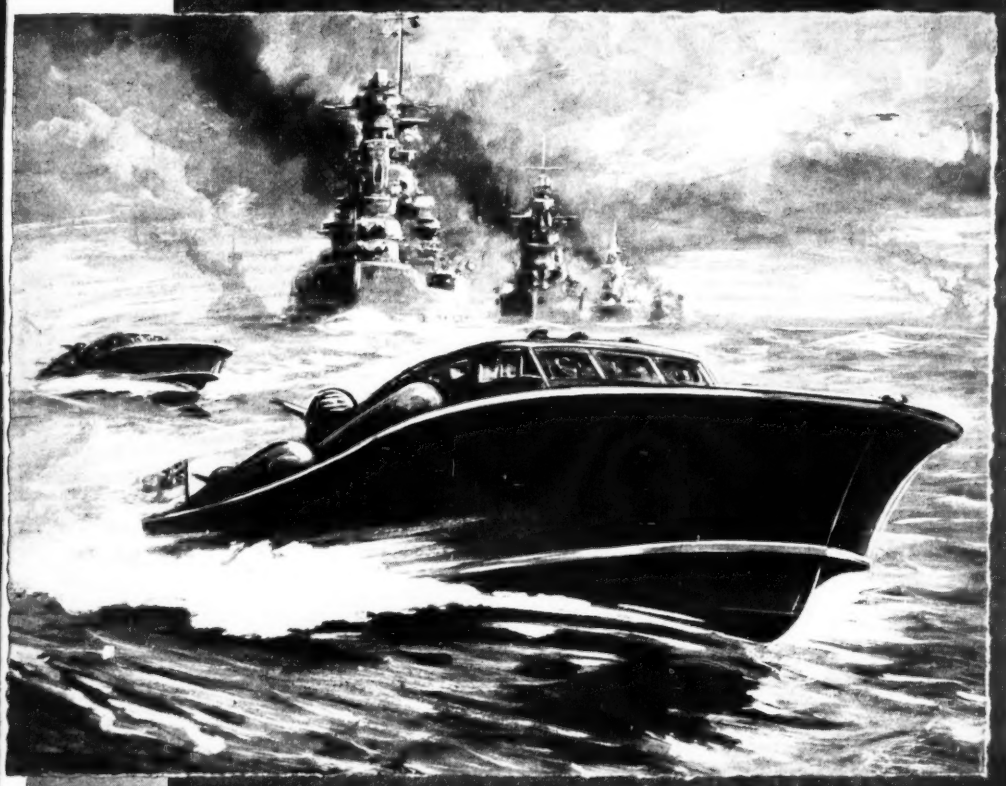

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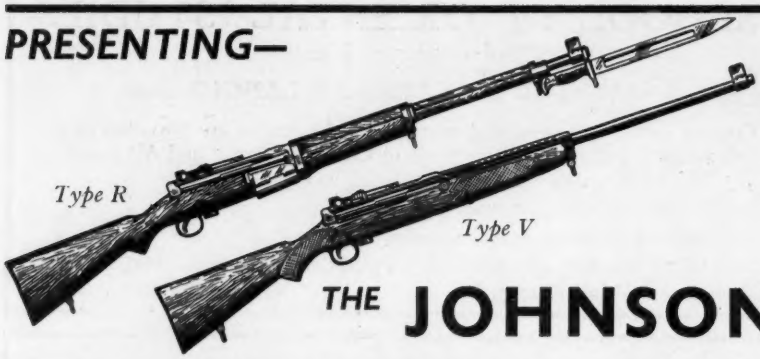

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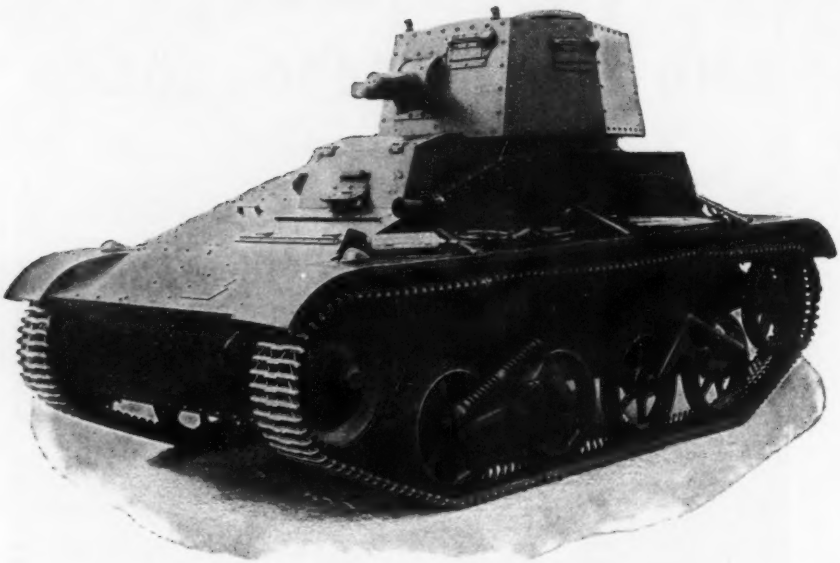

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MEMBERSHIP

Full particulars of Membership with alternative forms for Bankers' Orders can be obtained on application to " The Secretary, Royal United Service Institution, Whitehall, London, S.W.1."

Commissioned Officers of *all* H.M. fighting Services, including those of the Dominions, Colonies and India, and Midshipmen and equivalent ranks of the Royal Navy, Dominion Navies, Royal Naval Reserve and Royal Naval Volunteer Reserve, are eligible for membership without proposal or ballot.

Naval, Military and Air Force Cadets are eligible on the recommendation of their Commanding Officers.

Gentlemen enrolled in establishments which imply that they will be given commissions in time of national emergency are eligible for membership by ballot of the Council.

An Officers' Mess may subscribe to the JOURNAL, but is *not* eligible for membership.

TERMS OF SUBSCRIPTION

ANNUAL MEMBERS.—Subscription £1 5s. od., payable on joining and on 1st January yearly. (NOTE.—The Entrance Fee has been temporarily suspended).

LIFE MEMBERS.—

(*a*) £20 os. od., payable in one sum or;

(*b*) £21 os. od., payable in four instalments of Five Guineas, the first on joining, the others on 1st January of each succeeding year.

The above rates of subscription entitle Members to the loan of four volumes at a time from the Library, provided they are at Home or at those stations abroad where arrangements exist for forwarding books.

It is important that Officers joining should furnish full and clear particulars of their Name, Rank, Ship, Regiment or R.A.F. Squadron, etc., and the address to which they wish their JOURNALS sent.

Officers of the Indian, Dominion and Colonial Naval, Military, and Air Forces temporarily in the United Kingdom may become members for a period of six months on payment of Ten Shillings and Sixpence, or One Guinea for twelve months. The additional subscription to the Lending Library is Five Shillings for six months.

THE INSTITUTION

The Royal United Service Institution is situated just below the War Office in Whitehall. It has the best professional Library in the United Kingdom; a Lecture Theatre, where an autumn and winter session of lectures is devoted to subjects of current or historical Service interest. The Reading and Smoking Rooms are provided with the leading papers, periodicals and writing materials.

The Institution is open daily from 10 a.m. to 7 p.m., except Sunday, Christmas Day and Good Friday.

THE JOURNAL

The R.U.S.I. JOURNAL is published quarterly and sent post free to Members in any part of the world. Copies may be purchased by non-members, price 7s. 6d.

THE MUSEUM

Situated in the Banqueting Hall of the old Palace of Whitehall (1622), with its magnificent Rubens ceiling, the R.U.S. Museum is a treasure house of relics and mementoes of great victories and renowned warriors. There is also a most valuable collection of Uniforms, Medals, Ship, Tank, and Aircraft Models, and models of the battles of Trafalgar and Waterloo.

For Members and their friends, there are private entrances to the Museum from the Institution.

H.M. Forces in uniform are admitted free at the public entrance.

Admission to the general public is 1s.; Wednesday and Saturday after Noon, 6d.

SECRETARY'S NOTES

May, 1939.

ROYAL VISIT

Her Majesty Queen Mary and His Royal Highness the Duke of Kent visited the Museum on 20th February to see the model of the old Whitehall Palace before inspecting the excavations in rear of the Banqueting House.

They were received by the Chairman of the Council, Air Vice-Marshal Sir Philip Game, G.C.V.O., G.B.E., K.C.B., K.C.M.G., D.S.O., and the Secretary, Captain E. Altham, C.B., R.N., and were also met in the hall by the First Commissioner of H.M. Office of Works, the Right Hon. Sir Philip Sassoon, G.B.E., Bt., M.P. who subsequently conducted them over the excavations.

Chairman of the Council

Admiral of the Fleet Sir Frederick Field, G.C.B., K.C.M.G., has been elected Chairman of the Council for 1939–40.

Vice-Chairman of the Council

General Sir Felix Ready, G.B.E., K.C.B., C.S.I., C.M.G., D.S.O., has been elected temporary Vice-Chairman of the Council.

Council

Admiral of the Fleet Sir Frederick Field, G.C.B., K.C.M.G., has been elected to fill a naval vacancy on the Council, and Marshal of the Royal Air Force Sir Edward Ellington, G.C.B., C.M.G., C.B.E., to fill a Royal Air Force vacancy.

Other changes in the Council will be found in the Report of the Anniversary Meeting.

Ex-Officio Member

Captain R. J. R. Scott, A.M., R.N., has succeeded Rear-Admiral W. S. Chalmers, D.S.C., as an Ex-Officio Member of the Council on taking up the appointment of Director of the Royal Naval Staff College.

New Members

The following officers joined the Institution during the period 18th January to 15th April.

ROYAL NAVY

Admiral Oliver Backhouse, C.B.
Vice-Admiral B. G. Washington, C.M.G., D.S.O.
Commander M. B. Laing, R.N.
Captain W. R. Phillimore, R.N.
Captain T. P. Honnor, Royal Marines.
Lieutenant J. W. Lucas, R.N.
Vice-Admiral R. Fitzmaurice, D.S.O.
Lieutenant-Commander W. H. Roberts, R.N.
Sub-Lieutenant R. C. Beavis, R.N.V.R. (Straits Settlements).
Captain R. J. R. Scott, A.M., R.N.
Lieutenant F. B. Currie, R.N.
Lieutenant H. A. Corbett, R.N.

ARMY

Major-General J. H. T. Priestman, C.B.E., M.S.O., M.C.
Lieutenant D. L. Richardson, The King's Regiment.
Brigadier Hanbury Pawle, C.B.E., T.A.
Major H. A. Tyler, Royal Artillery.
Captain N. S. Durrant, Royal Garhwal Rifles, I.A.
Captain R. H. N. Graham, The West Yorkshire Regiment, Hon. Flight-Lieutenant, R.A.F. (seconded).
Captain R. T. Conant, 43rd Light Infantry.
Lieutenant M. A. Latif Khan, 1st Battn. 7th Rajput Regiment, I.A.
Lieutenant-Colonel A. C. Rolston, T.D., Devon and Cornwall (Fortress) R.E.
Lieutenant-Colonel R. H. Anderson, late 5th K.E.O. Lancers, Probyn's Horse.
Lieutenant-Colonel E. P. Buchanan, M.C., 7th Battn. The Argyll and Sutherland Highlanders.
Lieutenant-Colonel A. H. Gatehouse, M.C., Royal Tank Corps.
Captain C. G. Hill, The Royal Irish Fusiliers.
2nd Lieutenant P. A. C. Howlett, 54th City of London A.A. Regiment (T.A.)
Lieutenant W. G. Harding, F.R.S.(Edin.), F.R.Hist.S., F.S.A.Scot., late The Middlesex Regiment.
Lieutenant-Colonel G. de L. Landon, M.C., Royal Artillery.
Lieutenant J. E. Ridsdale, The Royal Norfolk Regiment.
2nd Lieutenant F. J. Shipley Ellis, 402nd A.A. Searchlight Company R.E. (T.A.).
Colonel J. W. Cohen, C.M.G., C.B.E., D.S.O., T.D., Royal Corps of Signals (T.A.).
Lieutenant E. R. King, The Royal Scots.
Revd. B. W. Mackie, Hon. C.F., 4th Class, R.A.C.D.
Lieutenant A. C. S. Delmege, The King's Dragoon Guards.
Captain P. H. C. Hayward, The Royal Berkshire Regiment.
Lieutenant P. S. Sandilands The Royal Scots Fusiliers.
Captain E. K. Steward Royal Signals.
Captain M. J. B. Burnett, Royal Artillery.

2nd Lieutenant H. J. P. Candler, 52nd (6th London) Anti-Tank Regiment, R.A. (T.A.).
Lieutenant J. E. L. Corbyn, The Lancashire Fusiliers.
2nd Lieutenant P. A. Knight, The Royal Scots Fusiliers.
Colonel the Marquess of Ailsa, 4/5th Battn. The Royal Scots Fusiliers (T.)
Captain Hon. J. D. Kemp, 51st Field Regiment, R.A. (T.A.).
2nd Lieutenant K. R. Fay, The Green Howards.
Major F. W. de Guingand, The West Yorkshire Regiment.
Captain F. C. Simms, The Royal Warwickshire Regiment.
Major D. R. Thomas, O.B.E., M.C., The Bedfordshire and Hertfordshire Regiment.
2nd Lieutenant M. E. B. Williams, 4th A.A. Regiment, Royal Artillery.
Lieutenant-Colonel K. B. S. Crawford, Royal Engineers.
Lieutenant A. T. Edgar, Federated Malay States Volunteer Forces.
Lieutenant-Colonel C. O. Morris, D.S.O., late R.I.A.S.C.
Major R. H. Rayner, M.B.E., M.P., late Royal Signals.
Colonel Sir William H. D. Acland, Bart., M.C., A.F.C., T.D.
Captain G. R. T. Gillett, Royal Artillery.
Lieutenant C. J. MacLaren, The Duke of Wellington's Regiment.
2nd Lieutenant J. R. S. Clarke, Scots Guards.
Captain A. I. Buchanan-Dunlop, The Royal Scots Fusiliers.
Lieutenant J. W. Bell, Royal Artillery.
Captain J. M. White, The King's Royal Rifle Corps.
Captain L. D. A. De Hochepied Larpent, The Royal Northumberland Fusiliers.
Lieutenant T. F. C. Hamilton, The Royal Northumberland Fusiliers.
Captain F. J. F. Whittington, 4/15th Punjab Regiment, I.A.
Major W. Scott Shepherd, M.C., Regular Army Reserve of Officers, The Wiltshire Regiment.
Lieutenant G. P. Campbell-Preston, The Black Watch.
2nd Lieutenant R. D. N. Sanders, Royal Artillery.
Captain John W. Trelawny, The Suffolk Regiment.
Lieutenant D. J. R. Parker, The Somerset Light Infantry.
Lieutenant J. R. Smith-Saville, 4/5th Battn. The East Lancashire Regiment, T.A.R.O.
Lieutenant R. B. Hale (retired) 5th (C.P.) Battn. The Royal Sussex Regiment.
Captain D. A. K. W. Block, R.A.
Captain E. F. D. Hyde, The Northamptonshire Regiment.
Captain I. R. McIntosh, R.A.
2nd Lieutenant M. E. B. Leader, The Bedfordshire and Hertfordshire Regiment.

ROYAL AIR FORCE

Flying Officer J. N. Dowland, R.A.F.
Squadron Leader V. S. Bowling, R.A.F.
Squadron Leader R. W. Hill, R.A.F.
Flying Officer S. G. Walker, R.A.F.
Squadron Leader A. E. Dark, R.A.F.
Flying Officer F. L. Ingall, A.A.F.
Flying Officer W. I. C. Inness, A.A.F.
Squadron Leader J. N. Tomes, R.A.F.

Gold Medal Essay (Military) 1939

The following subject has been selected :—

" The development of air forces has increased the burdens imposed on Home Defence. Discuss its effects on the role and organization of the Regular and Territorial Forces in the event of a major European War."

The following essay has been received :—

" Obaro Obarmare."

JOURNAL

Gold Medal Essay (Air) 1938

The War Office have, with regret, been compelled to withhold permission for the publication of the Gold Medal Essay, 1938, written by Lieutenant W. L. Nevill, R.A.

February (1938) Journal

Owing to exceptionally heavy demands for the JOURNAL of February, 1938, the Institution's stock of that number is very low. Will any Member who has finished with his copy kindly return it.

Orders for Supply

Subscribers are recommended to place orders for supply of the JOURNAL direct with the Royal United Service Institution, thereby obviating delay in delivery. A suitable order form can be provided on request.

MUSEUM

Special Exhibition

It is hoped to open a Special Exhibition depicting the " Royal Artillery, Past and Present " in time for the Whitsun holidays and to be continued throughout the Summer. It will comprise a 20-foot diorama with models showing the different units of artillery at the present day, other large-scale models of military ordnance, past and present, pictures, including a selection from the Crookshank Collection, photographs, and relics and uniforms.

Additions

(9034) Signed photograph of Captain R. F. Scott, R.N.—Presented by the Executors of Captain W. Vansittart-Howard.

(9035) Sabretache, 3rd Bengal Light Cavalry, 1830.—Presented by Miss Tottenham.

(9036) Miniature models of the following ships :—H.M.S. " Amphion," " Emerald," " Adventure," " York," " Exeter," " Ladybird," " Ark Royal."—Purchased.

(9037) Sabretache, Royal Artillery, 1900.—Presented by Lieutenant-Colonel H. K. Sadler.

(9038) Two standard belts, 2nd Life Guards.—Presented by the Salisbury Museum.

(9039) Map of Lucknow, showing details of the Relief, 1857, and capture, 1858 Formerly belonging to Major-General Sir J. Outram.—Presented by the Lucknow Residency Committee.

(9040) Coloured print, "The Raising of the 16th Foot at Reading in 1688".—Presented by the Bedfordshire and Hertfordshire Regiment.

(9041) Autograph letter of J. H. Dunant, founder of the Red Cross Society.—Presented by H. Saxe-Wyndham.

(9042) German Chart showing the "Vindictive" sunk in Ostend Harbour.—Presented by Brigadier-General Sir J. E. Edmonds, C.B., C.M.G.

(9043) Cross-belt, 13th Middlesex (Queen's Westminster) Rifle Volunteers, worn up to 1908.—Presented by E. G. H. Cox.

(9044)–(9050) Collection of uniforms and accoutrements.—Presented by the Wellcome Historical Medical Museum.

(9051) Despatch of Major-General C. G. Gordon from Khartoum.—Presented by the Misses Tien.

(9052) Collection of Medals.—Presented by Mrs. A. F. A. Howe.

(9053) Full dress uniform, 26th Light Cavalry.—Presented by Lieutenant-Colonel A. G. Armstrong.

(9054) Guidon, 7th Queen's Own Light Dragoons, 1785–1805.—Presented by A. Fern.

Loans

(3648) Model of a Bren Gun.—Lent by Captain D. G. Moore.

Attendance

The amounts taken for admission during January, February and March were as follows :—

£91 12s. 6d. in January.
£72 2s. 0d. in February.
£74 6s. 0d. in March.

THE 3.7 IN. ANTI-AIRCRAFT GUN

THE JOURNAL
of the
Royal United Service Institution

Vol. LXXXIV. MAY, 1939 No. 534.

[Authors alone are responsible for the contents of their respective Papers. All communications, except those for perusal by the Editor only, should be addressed to the Secretary, Royal United Service Institution.]

THE MACHINERY OF THE COMMITTEE OF IMPERIAL DEFENCE

By MAJOR-GENERAL H. L. ISMAY, C.B., D.S.O., Secretary of the Committee of Imperial Defence.

On Wednesday, January 11th, 1939, at 3 p.m.

THE RIGHT HON. SIR THOMAS INSKIP, KT., C.B.E., M.P., in the Chair.

THE CHAIRMAN, in introducing the Lecturer, said: General Ismay has qualifications which hardly anyone else possesses for speaking about the Committee of Imperial Defence. He served for some years as Assistant Secretary of the Committee under Sir Maurice Hankey (now Lord Hankey), and, after returning to purely military duties, he has now succeeded Lord Hankey as the Secretary of the Committee.

The importance of the Committee of Imperial Defence is manifest to everybody. I am not aware that there is to be found in any place an accurate and authoritative statement about that organization, and it is a great advantage to us and will be, I hope, to many others connected with the Royal United Service Institution that there should be a statement to which reference may be made by all those who desire to become better acquainted with our organization of defence.

LECTURE

A FEW months ago the Secretary of the Royal United Service Institution told me that he was constantly receiving requests, especially from officers serving abroad, for literature on the subject of the composition and working of the Committee of Imperial Defence, and that he could only reply that there was nothing official published about it. In conveying an invitation to me to give this lecture, he said that the Council of the Institution fully appreciated that I could not talk about current controversies, but that they hoped it might at least be possible for me to give a description of the *machinery* of the

Committee of Imperial Defence, which could be published in the Journal for the benefit of those who had not had the opportunity of informing themselves on the subject. With the permission of our Chairman this afternoon I readily accepted this invitation.

I appreciate, of course, that a lecture framed on such elementary lines and of such limited scope will be profoundly uninteresting to those of my audience—and they probably represent a large majority—who are already familiar with the subject, and came here this afternoon hoping to hear something rather different. I can only crave their indulgence, and ask them to assist in the object which the Council of the Institution have in mind by commenting during the Discussion which will follow on any points which I may have omitted or which I may have failed to make clear.

HISTORICAL.

I do not want to spend too much time on past history, but it would be difficult to present a clear picture of the present machinery of the Committee of Imperial Defence without explaining its origin and subsequent development.

Pre-War Period

Its origin came about in this way. After the South African War a Committee was set up under the Chairmanship of Lord Esher to consider the reconstitution of the War Office. This Committee, in the course of their first report, drew attention to a grave defect in our general defensive arrangements. This is what they said :—

"The British Empire is pre-eminently a great naval, Indian and Colonial Power. There are, nevertheless, no means for co-ordinating defence problems, or for dealing with them as a whole. . . . . We are driven to the conclusion that no measure of War Office reform will avail, unless it is associated with provision for obtaining and co-ordinating for the use of the Cabinet all the information and the expert advice required for the shaping of national policy in war, and for determining the necessary preparations in peace. Such information and advice must necessarily embrace not only the sphere of the War Office but also the spheres of the Admiralty and of other offices of State." In a word, there was no recognised machinery for co-ordinating defence questions ; and such machinery was badly needed.

The remedy proposed by the Committee was the creation of a Committee of Imperial Defence. The Prime Minister was to be its "invariable President," with "absolute discretion in the selection or variation of its members" ; and there was to be a small permanent secretariat, which would, among other things, provide continuity.

The Government of the day accepted this recommendation, and the Committee of Imperial Defence was formally brought into being in May, 1904. The Secretariat was established in Mr. Disraeli's old house in Whitehall Gardens. These attractive old buildings have, alas, now been pulled down, and the Secretariat is housed in Richmond Terrace. I only mention this detail, because, to judge from envelopes that have found their way to me, some people appear to think that the Committee of Imperial Defence is an appendage of the War Office, others that it is an appendage of the Treasury, others that it works at 10, Downing Street; whereas it is, of course, an entirely separate entity.

The Committee of Imperial Defence has always had two characteristics which are so fundamental to its whole conception that they should be explained at once. The first is that it has no executive authority whatsoever. It only co-ordinates and gives advice. Of course it goes without saying that the advice of a body which has the Prime Minister as its Chairman and whose meetings are regularly attended by many other Cabinet Ministers and the professional heads of the four Crown Services is generally accepted. But that does not alter the constitutional position which, strictly speaking, is that the Committee of Imperial Defence advises on defence questions; the Cabinet decides; and the Department or Departments concerned take the necessary executive action. This does not mean, of course, that it is necessary for every question on which the Committee of Imperial Defence is asked to advise to go subsequently to the Cabinet. Far from it. In the majority—I should say ninety-five per cent.—of cases, the agreed recommendations of the Committee of Imperial Defence are automatically implemented by the Departments concerned on the responsibility and authority of their respective Ministers. If, however, a matter is one for which the Cabinet as a whole should take collective responsibility, the recommendations of the Committee of Imperial Defence are placed before them for decision before executive action is taken.

May I illustrate the latter category by an imaginary example. Let us suppose that the situation demands the despatch of military forces—and I use the word "military" in its widest sense—to some threatened point abroad. In that event the Committee of Imperial Defence consider all the factors which have a bearing on the problem—political, military, economic and so forth. Having reached agreement, it puts forward recommendations to the Cabinet as to the precise naval, military and air forces which should be sent, the dates on which they should start, the route by which they should go, the action that they should take on arrival, the diplomatic action that should be taken in parallel, and so forth. In other words, it submits to the Cabinet a comprehensive plan

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of action. The Cabinet then takes its decision in the light of this advice. Thereafter the Admiralty, War Office and Air Ministry issue the necessary orders to the naval, military and air force commanders concerned; the Foreign Office takes such diplomatic action as is involved; and the Board of Trade takes up the necessary shipping, and so forth.

It is difficult to see how any other arrangement would work under our present Constitution. The decision on all major questions, whether of defence or anything else, must clearly rest with the Cabinet as the executive organ of Government responsible to Parliament; and the Cabinet clearly could not share their authority with the Committee of Imperial Defence or anybody else. Again, every Minister of the Crown who is in charge of a Department of State is directly responsible to Parliament and the country for the whole business of that Department. If the Committee of Imperial Defence were to start issuing orders, say to naval Commanders-in-Chief as regards the movement of ships, or to local authorities as regards air raid precautions measures, the position of the First Lord of the Admiralty and of the Lord Privy Seal as the Minister responsible for Civil Defence, would be impossible. It may be suggested that this system is slow. To that I would reply that the machine is very flexible, and that all the processes which I have described can, if necessary, be put through in a very short time. For example, I have myself known a case in which orders for considerable troop movements and for all the ancillary arrangements on which such movements depend were issued within four hours of the machinery of the Committee of Imperial Defence being brought into play. I am referring to an isolated incident under peace conditions. War conditions are, of course, a different story, and later in my lecture I will explain the modifications in the system which were made during the Great War in order to combine rapid executive action with the maintenance of Cabinet control and responsibility. For the moment the point that I wish to emphasise as fundamental is that the Committee of Imperial Defence, by reason of the fact that it has no executive authority, is not a super-department and that it in no way modifies or limits Parliamentary control or Ministerial responsibility. Had it done either of these things, it would probably have perished long ago.

The second fundamental characteristic of the Committee of Imperial Defence is its elasticity. The Esher Committee deliberately avoided laying down any fixed composition, and stipulated that the Prime Minister should have absolute discretion as to the selection and variation of its members. He can invite whoever he likes. The result is that the individual and collective experience of every British citizen, irrespective of whether he, or she, is inside or outside Government circles, and irrespective of profession or political party, is available to the Committee

of Imperial Defence organization, provided, of course, that he or she is willing to accept the invitation to serve. I shall explain later on how this works out in practice.

After this somewhat lengthy, but I think necessary, digression, I will try to describe the activities of the Committee of Imperial Defence from the date of its birth up to the outbreak of the Great War. Broadly speaking, these fall into two categories.

In the first place, they hammered out the great fundamental principles that should govern Imperial Defence in regard to such matters as the respective roles of the Navy and Army; the defence of the British Isles against seaborne attack (in those days this was the only form of attack that was possible); the defence of India; coast defence throughout the Empire and so forth.

The second broad category of the Committee's work was an exhaustive survey of the possibilities and demands of a great war, and the preparation of detailed plans which would ensure that all authorities, both at home and abroad, should work to a pre-arranged and closely co-ordinated programme from the outset. These plans covered a very wide field, e.g., plans for controlling the movements of merchant shipping; plans for postal, telegraphic and press censorship throughout the Empire; plans against sabotage at home and abroad; and so forth. The plans were, as a general rule, prepared by Sub-Committees of appropriate constitution; after approval by the Committee of Imperial Defence, they were entered in the War Book. The Dominions, India and the Colonies were kept informed of these arrangements, and made their own plans accordingly.

The War Period

In 1914, ten years after the Committee's birth, the storm broke. Mr. Lloyd George in the first volume of his War Memories, pays a remarkable tribute to the manner in which the work that had been done by the Committee of Imperial Defence stood up to this supreme test. This is his description of the events of the first few days:—

> "Measures which conferred unheard-of powers on the Executive were passed through both houses of Parliament after a few hours discussion. Most of them had been carefully thought out during the tranquil years of peace by the numerous Sub-Committees of the Committee of Imperial Defence. Of what was accomplished by that remarkable body in the years before the War and of its foresight nothing has yet been mentioned. Its founder—Earl Balfour—when he set up the Committee of Imperial Defence as an essential part of the organization of defence, rendered a service

> to his country which deserves immortality. Under Mr. Asquith it carried on its tasks and traditions with undiminished vigour and persistance. It, therefore, came to pass that when war was thrust upon us, plans which played a vital part in our achievement of victory lay at hand . . . prepared to the last detail, and ready to be put into execution."

For the first few weeks of war, the Committee of Imperial Defence carried on on pre-war lines; but it was soon found that delays and confusion resulted from a system which required every recommendation of the Committee to be approved by the Cabinet as a whole before it could become effective. Mr. Asquith realised these shortcomings; but, in his anxiety to preserve collective Cabinet responsibility, he compromised by setting up a War Council. This body absorbed the functions of the Committee of Imperial Defence, which it closely resembled; but unlike the Committee of Imperial Defence it had a measure of executive authority on questions of detail. On questions of major policy, the Cabinet kept the conduct of the War in its own hands. Subsequently, a body known as the "War Committee" was substituted for the War Council. But the change was one of name rather than substance.

When Mr. Lloyd George became Prime Minister there was a very drastic change. The functions of the Cabinet and the War Committee were combined in a smaller body known as the "War Cabinet," which consisted of the Prime Minister himself and five other Ministers, none of whom, with the exception of Mr. Bonar Law, held a portfolio. They were thus able to devote their whole time to the conduct of the War without the distractions of Departmental administration. The War Cabinet had full powers of decision; but, apart from this, the distinctive features of the Committee of Imperial Defence were carried on: the same close association with the Chiefs of Staff; the same extensive use of Sub-Committees—there were over two hundred of them when the war ended; the same Secretariat—only larger; the same secretarial methods. In other words the machinery of the Committee of Imperial Defence was throughout the War adapted to war needs.

The War Cabinet system survived until the end of the War; and there is good reason to believe that none of the other belligerents evolved anything better. For example, General Ludendorf tells us in his Memoirs "that the machinery of Government in Berlin gave the impression of being extremely clumsy. The various Departments worked side by side without any real cohesion, and there was infinite overlapping. The left hand did not know what the right hand was doing."

As to the future, the crux of the whole problem of the higher direction of war is to devise a system which will combine rapid and effective

executive action with the maintenance of Cabinet responsibility and control. It is clear that the system will vary according to the character and scope of the conflict. For example, to take an extreme case, it would be absurd to unsettle the ordinary peace-time machinery of Government in order to conduct a war with a " Mad Mullah " of Somaliland. At the other end of the scale, it might so happen that nothing short of a small War Cabinet of the kind which was set up in 1917 could properly direct the national effort in a war which called for the mobilization of the entire national resources. The precise system to be adopted cannot be settled in advance of the event ; it must be decided by the Prime Minister and Cabinet of the day in the light of the then existing circumstances. But whatever the decision on this point, it seems tolerably certain that the organ of supreme control, whatever form it may assume—whether it be War Council or small War Cabinet—would take over the machinery of the Committee of Imperial Defence and that the transition from the peace system would be smooth, simple and practically instantaneous.

Post War Period

In November, 1919, the War Cabinet was replaced by a Cabinet of normal size, and the Committee of Imperial Defence reverted to a peace footing under its maiden name. They found themselves confronted with a far wider range and a far greater variety of problems than had fallen to the lot of their predecessors. In pre-War days, war was generally regarded as the almost exclusive business of the fighting Services ; and there were only two of them. The post-War situation was a very different one. The creation of a third Service—the Royal Air Force—had made the business of co-ordination at once more essential and more complicated. Again, the Great War had shown that modern war between Sovereign Powers is an affair of whole nations, and that it demands the mobilization of the entire national resources—human, material, industrial and economic. It showed, in fact, that the fighting Services are merely the cutting edge of a defensive mechanism which includes every single Department of State and all the national energies which those Departments control or direct. This meant for the post-War Committee of Imperial Defence that the field of defensive preparation had got to be almost immeasurably extended, and that all the civil Departments of State had got to be much more intimately associated with defensive preparations than had been necessary in pre-War days. Thirdly, aviation had robbed these islands of many of the advantages of their insularity. This meant that in their defensive preparations the Committee of Imperial Defence could no longer bank on the time margin for developing the immense resources of the Empire that was vouchsafed to their predecessors.

They proceeded to adapt and develop the machinery so as to deal with these new responsibilities; and this process of adaptation and development has gone steadily forward ever since. In the time at my disposal, I cannot enter into details, but two important developments must be specially mentioned:—

First, in 1923, the Chiefs of Staff Sub-Committee was brought into being. I shall refer to this later.

Secondly, in 1936, the office of Minister for Co-ordination of Defence was created. The following are some of the duties which the Prime Minister has delegated to this Minister (I quote from the White Paper relating to Defence of 3rd March, 1936):—

(1) The general day-to-day supervision and control on the Prime Minister's behalf of the whole organization and activity of the Committee of Imperial Defence. . . . The discernment of any points which either have not been taken up or are being pursued too slowly, and (in consultation with the Prime Minister or other Ministers or Committees as required) of appropriate measures for their rectification.

(2) In the Prime Minister's absence, taking the Chair at the Committee of Imperial Defence. . . .

(3) Personal consultation with the Chiefs of Staff together, including the right to convene under his Chairmanship the Chiefs of Staff Committee whenever he, or they, think desirable.

(4) The Chairmanship of the Principal Supply Officers Committee.

In addition, the Minister for Co-ordination of Defence is responsible for making such recommendations as he thinks necessary for improving the organization of the Committee of Imperial Defence.

THE PRESENT MACHINERY.

This brings me to the present situation.

The first point that I would emphasise is that, notwithstanding the developments that I have mentioned, the fundamental principles of the Committee of Imperial Defence are precisely the same as they were when it was first conceived: it is still purely advisory; it is still almost infinitely elastic; the Prime Minister is still its invariable President; he still has absolute discretion as to the selection and variation of its members; and there is still a small—though admittedly not quite so small—permanent Secretariat.

The Permanent Panel

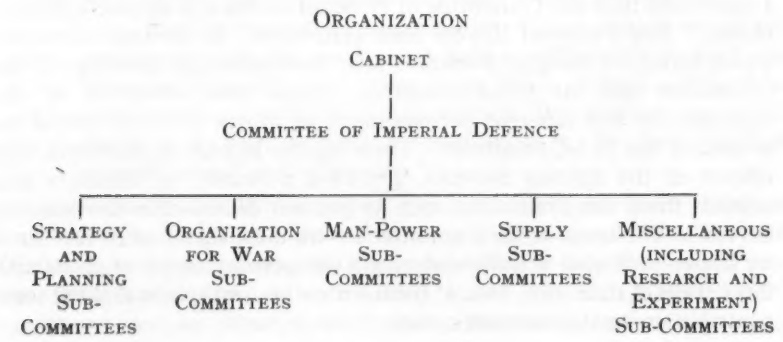
For some years past, it has been the practice for successive Prime Ministers on assuming Office to nominate the Ministers and officials whom

they wish to serve on what may be called the Permanent Panel of the Committee of Imperial Defence, and to attend all its meetings without invitation. The present Permanent Panel of the Committee is as follows:—

The Prime Minister (Chairman).
Minister for Co-ordination of Defence (Deputy Chairman).
Chancellor of the Exchequer.
Home Secretary.
Lord Privy Seal.
Secretary of State for Foreign Affairs.
Secretary of State for Dominion Affairs.
Secretary of State for the Colonies.
Secretary of State for India and Secretary of State for Burma.
First Lord of the Admiralty.
Secretary of State for War.
Secretary of State for Air.
First Sea Lord and Chief of Naval Staff.
Chief of the Imperial General Staff.
Chief of the Air Staff.
Permanent Secretary to the Treasury.
Secretary to the Cabinet.

The self-governing Dominions are not represented on the Permanent Panel, but certain of the Dominion High Commissioners in London regularly attend those meetings at which matters of interest to their Governments are down for discussion.

In addition to the Permanent Panel, other Ministers, other officers of the Crown Services, and experts of every kind—administrators, industrialists, scientists, and so forth—are invited to attend meetings when the problems under consideration call for their particular experience.



The organization of the Committee of Imperial Defence and the system on which it works is illustrated in the foregoing table. In principle, it is precisely the same as it was in the beginning; that is to say the detailed work is entrusted to a large number of Sub-Committees of appropriate constitution, while the Main Committee itself lays down the broad lines of policy, and acts as a sort of clamping machine and clearing house, and, if necessary, a court of appeal. The analogy that I would give you is that the Committee of Imperial Defence itself is the architect and at the same time the master-builder, engaged in directing and supervising the erection of the gigantic edifice of Imperial Defence; the actual construction and equipment of the building being entrusted to a host of sub-contractors, each of them an expert in his own particular line of business and each of them able to draw upon the most skilled labour available in the country. Lest this analogy should be thought smugly complacent, it should be added that even the best constructed buildings develop defects, and that however good their initial equipment, renovations and innovations are necessary if they are not to fall behind the times. So it is with the structure of Imperial Defence. It is the business of the Committee of Imperial Defence in general, and of the Minister for Co-ordination of Defence in particular, to discern any such shortcomings in the building and to take the proper measures for their rectification.

The Sub-Committees are shown in groups rather than individually for the sake of clarity. To set out the whole family tree in detail would make a very confusing diagram. Most of them are permanent or Standing Sub-Committees; some of them indeed date from pre-War days. Others are appointed *ad hoc* to deal with problems which are not altogether appropriate to any of the Standing Sub-Committees. These are generally dissolved when they have completed their tasks.

Before entering into details, may I make two general observations. I have said that the Committee of Imperial Defence is almost infinitely elastic. May I support this by some statistics? In the twelve months which ended on the 31st December last, there were 409 meetings of the Committee and its Sub-Committees. These were attended in the aggregate by 876 different persons many of whom of course served on several of the Sub-Committees. These figures include 35 Ministers, 297 officers of the fighting Services, 473 Civil Servants, 14 Ministers and officials from the Dominions, and 57 persons outside the Government Service. The scope of the Committee's work must therefore be measured by the co-ordinated activities of nearly 900 persons, many of them with large staffs of their own, each of them within his own sphere making some contribution to the common cause.

My second general observation is this. The term "Committee" is perhaps an unfortunate one because it is associated in the minds of some people with discussion rather than decision. But what is the alternative? The problems of defence are so many and so varied that no single man, and indeed no fixed body of men, however numerous or however well informed, can of themselves possess the knowledge to arrive at correct decisions, unless they are provided with expert advice on the various aspects of each particular problem. Such advice can only be obtained by assembling the team most appropriate to each case. This practice of delegation to experts is, I imagine, common to all big organizations, such for example as the London County Council, but the Committee of Imperial Defence is in the exceptionally fortunate position of having an almost unlimited field of talent from which to select their teams, or syndicates, or whatever you may like to call them. But I deliberately use the word 'team,' because it so aptly describes the spirit in which as a general rule these Sub-Committees work. In effect, though not in name, they constitute an immense and infinitely elastic, combined defence staff.

I now turn to a brief explanation of how some of these Sub-Committees are composed and what their work is.

Strategical and Planning Group

Taking the Strategical and Planning Group first, the most important is, of course, the Chiefs of Staff Sub-Committee. The Prime Minister is the Chairman and presides over occasional meetings. In addition, the Minister for Co-ordination of Defence has the right to convene the Sub-Committee under his Chairmanship whenever he or they may think desirable. Normally, however, the three Chiefs of Staff meet alone.

The responsibilities of the Sub-Committee are summarised in the following instructions which are issued to each Chief of Staff on assuming office, in the form of a warrant signed by the Prime Minister:—

> "In addition to the functions of the Chiefs of Staff as advisers on questions of sea, land or air policy respectively to their own Board or Council, each of the three Chiefs of Staff will have an individual and collective responsibility for advising *on defence policy as a whole*, the three constituting as it were, a Super-Chiefs of a War Staff in Commission."

In accordance with these instructions, the Chiefs of Staff direct and supervise the preparation of all military plans. In addition, they are called upon to give advice on the current defence problems which crop up from day to day. A week seldom passes without a Chiefs of Staff meeting; and on occasions they are in almost daily session.

The Chiefs of Staff have a number of Sub-Committees working under them. There is, for example, a Joint Planning Sub-Committee which consists of the Director of Plans at the Admiralty and the Deputy Directors of Operations at the War Office and Air Ministry. Their business is to prepare combined plans in accordance with the instructions given to them by the Chiefs of Staff Sub-Committee and generally to serve that Committee in the role of a combined Staff.

In 1936 there was an important development. The Joint Planning Sub-Committee was reinforced by three officers drawn respectively from the Navy, Army, and Air Force, a condition of their appointment being that they are graduates of the Imperial Defence College. These assistants have a common room in the Committee of Imperial Defence building, in addition to their rooms in their own departments. They are thus enabled to work in close and continuous collaboration with each other, and at the same time to maintain close contact with their own Departments and particularly with their own Departmental Chiefs from whom, and from whom alone, they take their orders. They work whole-time on combined planning, and the result of this reinforcement has been a considerable acceleration of business.

The Joint Intelligence Sub-Committee consists of the Deputy Directors of Intelligence at the Admiralty, War Office and Air Ministry, reinforced as necessary by representatives of the Foreign Office, the Department of Overseas Trade and other Departments. This Sub-Committee provides the Chiefs of Staff and Joint Planning Committee with co-ordinated intelligence in respect of any problem which they may be examining.

Organization for War Group

I now turn to the Organization for War Group, which includes a large number of Sub-Committees. I can, of course, mention only a few of them.

There is an Oversea Defence Committee which has been in existence for nearly fifty years. It has the Permanent Under Secretary of State for the Colonies as Chairman and its membership includes appropriate representatives from the Admiralty, War Office, Air Ministry, India Office, Burma Office, Dominions Office, Foreign Office, and Treasury. Its business, broadly speaking, is to advise on all questions relating to the defence of oversea Colonies, Protectorates, Dependencies and Mandated Territories, other than technical questions of coast defence which are dealt with by the Joint Oversea and Home Defence Committee.

The Civil Defence (Policy) Sub-Committee, and the (Technical) Sub-Committee which works under it, have recently been created as the result of the reorganization that was rendered necessary by the appoint-

ment of the Lord Privy Seal as Minister for Civil Defence. The Chairman of the Civil Defence (Policy) Sub-Committee is the Lord Privy Seal. The members are the Secretaries of State for the Home Department and Scotland, the Presidents of the Board of Trade and Education, the Ministers of Health, Labour and Transport, and the Postmaster-General.

These Committees are responsible, under the Committee of Imperial Defence, for reviewing the planning and organization by the Departments concerned, of all civil defence measures, including National Voluntary Service, and for their co-ordination. May I ask you particularly to note that these Committees function *under the Committee of Imperial Defence.* The problems of " military " defence and " civil " defence are closely interlaced, and it is essential that they should be brought together in a single focus so as to ensure that they are framed on the same basis and fit into one another. In fact, defence is indivisible.

Other Committees of this group are the Home Defence Committee, whose functions are implicit in its name; and the Joint Oversea and Home Defence Committee, whose particular business is the defence of ports both at home and abroad.

Then there is a Standing Inter-departmental Committee on Censorship, whose membership includes, in addition to representatives of all the Departments concerned, the officers who have been designated for the higher censorship posts in time of war. It will be appreciated, of course, that this Committee deals solely with plans for a war emergency, since there is no censorship of any kind in time of peace. The Committee itself lays down the general principles to be followed, and a small drafting Committee produces the necessary regulations and instructions. These are issued to all concerned in time of peace, in order to ensure that, in the event of war, it would be possible to enforce Postal, Telegraphic and Press Censorship from the outset.

Then there is a War Emergency Legislation Sub-Committee, which is responsible for considering what special powers it would be necessary for the Executive to have in time of war and for seeing that the necessary legislation is drafted in peace and ready to be placed before Parliament at the outset of hostilities.

Man Power Group

I will not deal in detail with the Man Power Group as it is in process of revision owing to the changes necessitated by the appointment of the Lord Privy Seal as Minister in charge of Civil Defence. Broadly speaking, however, its task is to review the various policies which could be adopted in the event of war to ensure that the man power of the nation is utilised to the best advantage and to prepare alternative schemes which will

obviate the repetition of those costly mistakes in the allocation of man power which were made at the beginning of the Great War.

Supply Group

Turning now to the Supply Group, the main Committees are the Principal Supply Officers Committee, the Food Supply Committee and the Oil Board.

The Principal Supply Officers Committee has a vast organization working under it, which has recently been fully explained in Parliament. The Minister for Co-ordination of Defence is Chairman, and its membership includes the Supply members of the Board of Admiralty and Army and Air Councils together with the Permanent Secretary of the Board of Trade, the Secretary, Ministry of Labour, the Secretary of the Department of Scientific and Industrial Research, the Adviser on Supply questions to the Minister for Co-ordination of Defence, and a Representative of the Treasury. In addition, the Offices of the High Commissioners for certain Dominions are represented by Associate Members.

The task of the Principal Supply Officers Committee is, broadly speaking, to foresee, and make provision for, the whole of the nation's requirements in time of war as regards both raw materials and manufacturing capacity. I might mention by way of example that it was this Committee which, by exhaustive enquiries, was able to identify those materials which would present difficulty in time of war, to estimate the probable extent of the gap in each case, and thus to advise as to the precise quantities of each of them that should be accumulated in time of peace, and held in reserve.

Miscellaneous Group

The Miscellaneous Group includes those Sub-Committees which are engaged in problems of experiment and research, and for obvious reasons I cannot go into details in a public lecture. I ought, however, to mention that the eminent scientists who are included in their membership devote themselves unstintingly to the service of these Sub-Committees.

Secretariat

The Secretariat of the Committee of Imperial Defence at present consists of one Secretary and eight Assistant Secretaries. Two of these are Civil Servants; the remainder are officers seconded from the fighting Services for periods of three to four years.

The Secretariat are not, as is sometimes imagined, advisers to the Committee of Imperial Defence. Their duties are secretarial; that is to say they arrange the business of the Committee of Imperial Defence and its numerous progeny of Sub-Committees; they record meetings, and draft the necessary reports and plans.

CONCLUSION

I have tried to explain the conception underlying the creation of the Committee of Imperial Defence, how it worked before the War, and how its machinery was used during the War. I have tried to explain how that machinery has been developed to meet the altered circumstances of the present day. My lecture will have been unworthy of its subject if I have failed to show you that the Committee of Imperial Defence is a living and progressive organism which, while preserving its fundamental characteristics, can be adopted and developed to meet any demands which future changes in the situation may make upon it.

DISCUSSION

MAJOR-GENERAL HUDDLESTON: The Lecturer spoke of the Sub-Committees on Civil Defence and told us what their composition was, but I do not think he stated that there were any members of the fighting Services on those Committees. If that is the case, I should like to ask the Lecturer why it is so.

THE LECTURER: All three fighting Services are represented on the Civil Defence Technical Sub-Committee.

CAPTAIN E. ALTHAM, R.N.: The Lecturer kindly suggested that I might recall to you one or two historical episodes which would emphasise the great developments that have taken place in the Committee of Imperial Defence since the years before and during the Great War.

For example, there was the extraordinary condition of affairs which prevailed at the time of the Agadir crisis in 1911. On the 23rd August of that year, in view of the strained situation, a special Committee was called and two Wilsons (one, who afterwards became Field Marshal Sir Henry Wilson, representing the War Office; the other being that distinguished First Sea Lord, Sir Arthur Wilson) propounded two absolutely different, if not diametrically opposed, plans for war.

In the year 1914, on the 5th August, what is described by Mr. Churchill in his *The World Crisis*—Vol. 1, as an Extraordinary Council of War, met, and, to use his own words (he was a Cabinet Minister then) "a decision was required upon the question, how should we wage the war that had just begun." Such an important decision as whether we should send four or six divisions to the Continent had not been taken, the problem of where the Army was to land and the question of whether we should retain a defending force of one or two divisions in England were still under discussion on the day *after* war broke out.

It is true that plans had been drawn up to meet such eventualities, and it was certainly not the fault of the Committee of Imperial Defence that decisions had not been come to sooner. It was quite an efficient piece of machinery even in those days; but there was no Chiefs of Staff Committee and there was no Joint Planning Committee. Those vital parts of the machinery, which have now been provided, were missing, and we saw the dire results in the hopeless muddle of the planning and execution of the Dardanelles campaign. A Joint Planning Committee to do the staff work for a Chiefs of Staff Committee would have saved us one of the most tragic episodes and terrible examples of waste of man-power and energy in the late war.

Another historic episode, which I think emphasises the very great improvement which has come about in the position of the professional heads of the Services

within the Committee of Imperial Defence, was the grim silence of the First Sea Lord when the final stages of the Dardanelles campaign were being discussed. In the presence of the Ministerial First Lord he did not feel that he was in a position to give his views or that he was called upon to do so. To-day, as we have heard, it would be incumbent upon a First Sea Lord to offer his opinion and give the benefit of his professional advice to the Government.

With regard to supplies, we can all recall the confusion, not to say competition, that there was between the Services in the War. This was particularly the case as regards the requirements of the Royal Naval Air Service and the Royal Flying Corps, and it led ultimately to the formation of the Royal Air Force. (For entirely different reasons that has, doubtless, been very much to the country's advantage to-day, although it is questionable whether it was so at the time.) The Royal Flying Corps, as we know, was starved of engines and other vital parts because the R.N.A.S. got in first; but now there is a special Sub-Committee of the Committee of Imperial Defence which would prevent anything of that sort happening even in peace time, still less in war time.

It has been my good fortune as a humble member of one of the Sub-Committees of the Committee of Imperial Defence to see a little and to read more of the work of the Secretariat, which General Ismay passed over all too modestly. Those of us who have had an insight of the scope and burden of their labours cannot fail to realize the tremendous debt of gratitude which the Services, indeed the nation, owe to that Secretariat. It was that "ruthless, relentless and remorseless" individual, Lord Fisher, who used to say that when a man became indispensable it was time he left; but I think he would have been the last person to apply that dictum to the present Lord Hankey. I may say, however, that, having had some dealings with his successor, I feel sure the mantle has fallen on very worthy shoulders.

LIEUTENANT-COLONEL PIERSON: I should like to ask the Lecturer who has the final authority in the event of disagreement in the Chiefs of Staff Committee as far as plans are concerned? For instance, suppose there was a difference of opinion about the allotment of an air force for the Army, the Army wishing to increase or alter this for the time being; would the whole responsibility fall on the Prime Minister of deciding what is almost a technical matter of the highest importance or is there any other existing body which would help him to decide? The matter came up before the Committee of 1923, to which the Lecturer referred. The chief witnesses were Lord Haldane and Sir William Robertson. The latter said that he approved entirely of the Chiefs of Staff Committee and he had only the one criticism to make to which I have referred. He made a good suggestion, but I do not know whether it was adopted or not. It occurs to me that this trouble might arise; judging from history, the Chiefs of Staff are not likely always to agree. Presumably the Prime Minister has the responsibility of giving the final decision.

THE LECTURER

I do not think it would be right to say that it would be the Prime Minister's responsibility; it would be the collective responsibility of the Cabinet.

With regard to technical experts disagreeing, do not they disagree in every walk of life? I have myself had three different opinions from doctors. One has to make up one's mind which opinion to take. Similarly, if there are differences of opinion between the Services, the body of men on whom the final decision rests have to make their choice for better or for worse. I remember an occasion on

which Lord Birkenhead was given diametrically opposed advice, not from two Services but from two General Staffs of the same Service—the Indian General Staff disagreeing with the British General Staff. He said: "Well, some people might find it uncomfortable as laymen to be confronted with these diametrically opposed opinions from our technical experts. Personally I do not find it uncomfortable in the least. Judges are constantly faced with comparable difficulties, and I have no hesitation in saying that in my judgment so-and-so is right and so-and-so is wrong."

THE CHAIRMAN:

I should like to take advantage of this opportunity of making any observations of my own to say only two things. One is to illustrate what Captain Altham said as to the duty of the Chiefs of Staff to express their views to the Committee of Imperial Defence. They do not attend the meetings of the Committee of Imperial Defence merely as the advisers of their Ministers. Lord Haldane, who was always very insistent upon their responsibility to speak and to let their opinions be known by active expression of them and not by mere silence or acquiescence, used to insist that it was most undesirable that the Chiefs of Staff should sit by their respective Ministers round the table, lest they might be unduly aware of the contiguity of the Ministers and so express their opinions in less decisive terms than were desirable. The presence of the Chiefs of Staff on the Committee of Imperial Defence is exactly the same as that of Ministers; they have precisely the same authority to express their views and to agree or disagree with Ministers as the Ministers themselves have to express their views and to agree or disagree with one another.

With regard to Colonel Pierson's question, I have had nearly three years experience of the Committee of Imperial Defence and I have known the Chiefs of Staff to disagree on only one occasion, and on that occasion further discussion resulted in their reaching a real agreement upon the principles on which the question at issue should be decided. I suppose, however, that all questions on which there was disagreement would have to be decided primarily perhaps by the Committee of Imperial Defence but ultimately by the Cabinet, as General Ismay has said. As an example of that I may mention the evacuation of Gallipoli, which was in the region of the highest professional knowledge and yet the decision was taken by the Cabinet itself and not by the War Committee, because the Prime Minister thought that, in spite of the fact that the question depended so much upon technical advice, the decision was of such very great importance that the Cabinet should take the responsibility of making it.

The customary votes of thanks to the Lecturer and the Chairman were carried by acclamation.

RE-ARMAMENT IN THE DOMINIONS

CANADA

CANADA, like the other Dominions, enjoys complete autonomy in both internal and external affairs and is free to concentrate on those political interests and defensive needs, which apply particularly to herself.[1] She is, moreover, extremely fortunate in her political relations and geographical situation. As a member of the British Commonwealth of Nations, her security is guaranteed in a general strategic sense by British sea power; and geographically as a part of the American Continent, she comes under the wing of the Munroe Doctrine and the protection of the United States. From what might be called a parochial point of view, therefore, her strategical problems are not difficult and do not appear to call for anything more than local defence against possible raids or low-scale attacks from overseas.

As she is entirely free to decide whether or not she will take part in war in which Great Britain or the other Dominions are engaged, it cannot be taken for granted that at all times and in all circumstances, Canada constitutes a reserve of man-power and industry upon which the British Commonwealth will be able to draw at will. Everything will depend upon the political and moral aspects of the war, and whether or not these appeal strongly to public opinion in the Dominion. There is, however, no reason to suppose that Canadians will adopt a narrow or legalistic attitude in the event of a war into which the Mother Country and the other Dominions may be drawn. All the indications are to the contrary. After all, " Blood *is* thicker than water " and, provided that the cause is just, they may be expected to throw in their full weight and develop to the utmost all their resources to defeat the common enemy.

Canada's war-potential is, actually, very high and her industries are more fully developed than those of any other Dominion. Unlike Australia, moreover, her factories are only about a week's sea voyage from British western ports. In the event of war, therefore, Canadian industries, which are situated in a relatively safe area would probably be of immense assistance to the Imperial war output. The organization of these industries for war and the direction of their activities into the most suitable channels

[1] For a broad survey of the problems of British Commonwealth Defence, see *The Round Table*, June, 1938.

has already begun. An Army, Navy and Air Supply Committee was set up a few years ago under the chairmanship of the Master-General of the Ordnance, for the purpose of exploring sources of supply of material to meet the requirements of the Canadian forces in time of emergency. A very extensive survey of industrial firms has been carried out by this Committee, which has had the co-operation of the Department of Mines and Resources as regards mineral reserves, and of the Department of Transport as regards the capacity of manufacturing plants. A privately owned company in Toronto has been given a contract for the manufacture of the "Bren" gun; and progress has been made with the production of a Canadian-made gas mask. Control of the export of arms, munitions, equipment, and "poison" gas has been established by an Order-in-Council, under which an exporter must secure a permit giving exhaustive details as to the consignor, consignee, destination and specific purpose of the goods.

THE ROYAL CANADIAN AIR FORCE

It was announced from Ottawa on 26th January, 1939, that about £13,000,000 had been allotted for defence purposes, almost half of which was ear-marked for the Royal Canadian Air Force. Eighty-three new aeroplanes are to be acquired, sixty-four for the Royal Canadian Air Force and the balance for the Non-Permanent Air Force. The regular personnel is to be increased by 14 officers and 217 other ranks, bringing the total strength to 269 officers and 2,043 other ranks.

The Royal Canadian Air Force has been re-organised on Service lines. The formation of units of the Non-Permanent (Civilian) Air Force has made considerable progress. About £1,500,000 has been allotted for the training of pilots; and training and bombing machines are being manufactured in Canada. Coastal air bases have been established on the Pacific and an air station has been set up on the Island of Anticosti in connection with the defences of the St. Lawrence. According to Press reports, it is the intention ultimately to have 23 Air Force units with a total of 520 machines, service and training.

The manufacture of aeroplanes in the Dominion is not being restricted to home requirements. On 16th November, 1938, Sir Kingsley Wood, Secretary of State for Air, announced in the House of Commons that negotiations with representatives of the Canadian aircraft industry had been successfully concluded. Agreements had been signed under which the British Government had placed an initial order for the manufacture of large bomber aircraft. Contracts had been entered into with a new central company—Canadian Associated Aircraft, Ltd., which had been created expressly for the purpose of the scheme. The company would maintain two central establishments at Montreal and Toronto. These

would, in due course, develop their plants and would also serve as central erecting factories fed by components supplied by six associated aircraft companies. The machines are due to be delivered during 1940.

THE ROYAL CANADIAN NAVY

As an enemy could approach Canada only from overseas, the provision of naval forces is a fundamental necessity. These forces might be expected to act in co-operation with the British and, in certain circumstances, with the United States Navies to deal with submarines, and to repel raids or local attempts at landings.

The total Naval Vote for this year is about £1,700,000—an increase of about £300,000 on last year's estimates. Provision has been made for the purchase of a flotilla leader from Great Britain. The personnel of the Royal Canadian Navy will be increased by 21 officers and 363 ratings to a total of 140 officers and 1,825 ratings. A Fleet Reserve, in which the officers and men discharged from the Navy can serve for five years, is to be established. A Fisherman's Reserve of 40 skippers and 160 seamen is to be formed on the Atlantic Coast, similar to the Reserve already existing on the Pacific Coast. Two new divisions of the Royal Canadian Naval Reserve, bringing the total to 19, are planned. Four Canadian-built minesweepers have recently been taken over from the builders.

Six destroyers are normally based, four at Esquimalt on the East and two at Halifax on the West Coast. It is understood that the Government intend to provide ultimately a total of eighteen destroyers, nine for each seaboard, but no date for the completion of this programme has been announced. Consideration has also been given to the construction in Canada of small, speedy motor launches, lightly armed and equipped with torpedo tubes.

THE ARMY

On land, the Canadian defence forces have not yet been developed to any degree of strength and are almost negligible in quantity—though high in quality—in relation to the size of the country and the growth of its population and wealth. The Active Militia, Permanent and Non-Permanent, forms the first line of the military defences. It is supported by officer reserves and a reserve militia. The Non-Permanent Active Militia corresponds, more or less, to the Territorial Army at home and constitutes the bulk of the military forces of Canada. The strength of the Permanent Active Militia is about 4,000 of all ranks; the Non-Permanent Militia numbers about 45,000, of whom about 14,000 usually attend camp for an average period of about eight days.[1]

[1] See League of Nation's Armaments Year Book, 1938.

During the last two years, the Non-Permanent Active Militia has been re-organized on modern lines; redundant cavalry and infantry regiments have been disbanded, amalgamated, or formed into armoured-car, tank, machine-gun or artillery units; and the period of training is to be extended. In addition, necessary ancillary units for a mechanized force have been formed. A Tank School has been opened at London, Ontario.

When it is recalled that Canada enlisted over 600,000 of all ranks for service during the Great War, the cadre of the Permanent Active Militia, whose duty it is to provide instructors and to staff the military schools and courses of instruction for the National Army, seems very small.

The aggressive spirit shown by Japan in her attack upon China, has caused the Government to pay special attention to Canada's defences on the Pacific coast. Considerable progress has been made in recent months in making Vancouver a strong base as part of a comprehensive plan for defending the whole Pacific Coast of Canada. The main fortifications centre around the ports of Vancouver and Prince Rupert, with secondary defences at Victoria, on Vancouver Island, eighty miles South-West of Vancouver. Concrete emplacements have been built and batteries erected on islands and headlands along the coast. At Vancouver itself, Canada's largest and most up-to-date airport and seaplane base have been established. At Esquimault, near Victoria, which is the main Pacific naval base, a system of underground magazines is being constructed for protection against air attack. At Kamloops, in the centre of British Columbia and within the first line of 10,000-foot mountains, another magazine and military depot is being built, while a secondary line of defence has been established East of the Rocky Mountains at Calgary. Two batteries of 6-in. guns will guard the entrance to Vancouver Harbour. The organization of militia units of coast artillery for manning heavy guns and searchlights is being rapidly pushed ahead.[1]

This year's vote for the Army is about £4,000,000—an increase of nearly £1,000,000 on last year's estimates. Of this £450,000 will be spent on new construction; £700,000 to pay for arms and ammunition ordered and due for delivery during the financial year, while new arms and ammunition, costing £600,000 will be ordered during 1939-1940.

Various changes have been made in the Army Staff and Major-General T. V. Anderson has been appointed Chief of the Canadian General

[1] These details regarding the base at Vancouver are taken from *The Montreal Gazette.*

Those of our readers, who are interested in the strategical implications of the Vancouver Base, should study the article entitled "The Defence of the West Coast," by A. R. M. Lower, published in the *Canadian Defence Quarterly*, October, 1938.—EDITOR.

Staff in place of Major-General Ashton, who has been assigned to special duty in connection with the Inspectorate of Defences. Brigadier H. F. Hertzberg has been appointed Quartermaster-General in place of General Anderson.

SUMMARY

To sum up, Canada's re-armament plans seem to have been established on a broad basis and to be directed in part towards objects other than those of purely local defence. Her industries, the aircraft industry in particular, are being rapidly expanded with the dual purpose of building machines for the use of the Royal Canadian Air Force at home and as a source of supply for the Royal Air Force in the United Kingdom. Her naval forces are being increased with the ultimate object of forming a flotilla of nine destroyers on each seaboard. Her army is being modernized and mechanized and its efficiency increased by a longer period of training. Canada's resources, both in man-power and industry, are far higher than those of any other Dominion and her relative proximity to British western ports facilitates co-operation with the Mother Country. In the event of a prolonged struggle, therefore, the help that she could provide might well be a decisive factor in achieving victory.

UNION OF SOUTH AFRICA

By DONALD COWIE

AFTER the Great War the Union of South Africa concluded an agreement with Great Britain whereby the Royal Navy would continue to be responsible for the protection of her protracted coastline. Incidentally this pact, signed by General Smuts and Mr. Winston Churchill in 1922, specifically recognized Simonstown Harbour as a British naval base. At that time this seemed to provide the Dominion with effective cover against all reasonable risks of war; Germany had been driven out of South-West Africa, Tanganyika, Togoland and the Cameroons, so there was no danger of attack by land, and the Royal Navy would guard the Union against attack from the sea. Altogether South Africa had good reason to consider herself fortunately placed.

Then came the Italian conquest of Abyssinia and consequent militarisation of that country and neighbouring Libya, including the raising of black levies in those territories, while the speeding-up of air communications between Europe and the Union further emphasized the gradual disappearance of that isolation which in itself seemed to be a safeguard. Germany's campaign to recover her former colonies was the culminating factor which caused the South African Government to review their defence policy. Their anxiety was not unnatural; the great prosperity of the Dominion as the result of the demand for gold made it a tempting bait in a hungry and impoverished world, while Great Britain's reckless reduction of her Navy in the face of the growing naval strength of potential enemies caused the South Africans to turn anxious eyes towards 4,000 miles of unprotected coastline. Even extreme Nationalists, who held that the Imperial connection was a simple device to serve the ends of Great Britain exclusively, became uneasy.

It was in these circumstances that the Defence Minister, Mr. Pirow, prepared a plan for rearmament which was laid before the South African House of Assembly on 7th September, 1938, and which has since been adopted.

In drawing up this plan Mr. Pirow took into consideration the limited man-power which the white population of the country could provide, the fact that a large measure of voluntary service would be necessary, and inevitable restrictions on expenditure. It has been based on the two assumptions that South Africa's geographical position is such that the Union forces will not be required to make their maximum effort until some six months after the outbreak of hostilities; and that, if it is attacked, the Dominion will be called upon to fight a mobile war, and that it will not be liable to gas or bomb attacks on towns. To quote Mr. Pirow's actual words when he was presenting the Defence Estimates, the Union approached her defence problem from "premises as different from those overseas as the German East African campaign was from warfare in Flanders."[1] The considered view of the General Staff was that South Africa, under present world conditions, would hardly be liable to attack from the sea otherwise than by way of an isolated raid, but there was "more than a possibility that we shall, within our generation, be called upon to defend ourselves against an enemy on or beyond our northern borders, that is to say, in bush country.[2] But coastal defence alone will require a land army numbering with reserves not less than one-third of the total forces, besides a number of fortified harbours; and

[1] "Union of South Africa, House of Assembly Debates," Volume 32, 1938.

[2] Op. cit.

such an army will have to be more liberally equipped with medium and heavy artillery and armoured vehicles than forces for bush frontier work.

Three Years' Defence Plan

On the basis of these postulates, Mr. Pirow introduced the Three Years' Defence Plan, to cost approximately £6,000,000 over that period, £5,000,000 of which would be spent on additional arms, equipment and defence works, and £1,000,000 on coastal defences. To meet the cost £1,000,000 is being provided in the 1938-1939 estimates, £2,000,000 in the 1939-1940 estimates, and £3,000,000 in the following year.

In regard to Coast Defence, it is proposed to go beyond the recommendations of the 1928 Report of the Committee of Imperial Defence, and make Capetown proof against attack by battleships. (In 1928 the Committee had been faced by a very different world situation, and had suggested that it would be sufficient to protect the harbour against cruisers.) Accordingly Robben Island, seven miles off Capetown in Table Bay, is being equipped with batteries of 15-in. guns. These batteries will protect the entrance to Table Bay, while similar guns will be mounted on the shore overlooking the Bay.[1] Similarly Durban—the terminus of the Empire flying-boat service—will be made "cruiser-proof," and East London and Port Elizabeth will be provided with strong coastal defences.

As regards military forces, the new Defence Plan aims to place in the field and maintain :—

(1) Three Active Citizen Force Divisions numbering approximately 67,000 men ;

(2) Three special Defence Rifle Association Brigades (Commandos) numbering approximately 10,000 men ; and

(3) Three field forces of Defence Rifle Association riflemen numbering approximately 60,000 men.

According to Mr. Pirow, this total of approximately 137,000 troops represents the maximum available for normal defence, although conscription of every male between the ages of 17 and 60 might produce another 150,000 citizens capable of carrying a rifle. Thus, in the event of war the Union would possess a striking force of over a quarter of a million men, or more than twelve per cent. of the population, which represents, in the view of one authority, "the limit of its available military strength."[2] Although this may appear small, the writer continues, "it

[1] *The Daily Telegraph and Morning Post*, September 8th, 1938.

[2] *South Africa*, September 10th, 1938.

would be equivalent to an army of well over five million men on the basis of Great Britain's population." It should be added that training in bush warfare is being made a special feature of the Plan, since the strategy on which it is based contemplates, as already envisaged, the possibility of a land attack.

Most of the necessary arms and equipment is being bought through the British War Office, but a certain proportion is being manufactured in South Africa. An ammunition factory, with a large output capacity has been established at Pretoria. Raw materials are all obtained from local sources, with the exception of aluminium, which is imported. In fact, South Africa's only deficiencies consist of certain metals such as aluminium, with the addition of rubber and oil. An output of 12,000,000 cartridges a year represents the peace-time requirements of the Union's defence forces.

Modern equipment is certainly South Africa's greatest military need at the present time, and the aim of the Defence Department is to compensate for the shortage of man-power by the greatest possible supply of automatic weapons. In addition to small-arms ammunition the following items of munition are now being manufactured in South Africa, in great part as a result of co-operation between the Defence Department and the Government railway workshops: cordite, infantry mortars, steel helmets, metal components for aircraft and other bombs, T.N.T., armour plate, filling plant for bombs, shells and fuzes, 3.7-in. howitzer equipments, shells for field guns—3.7-in., 25-pdr. and 18-pdr., armoured cars, gas masks, 3.45-in. gun howitzer equipment, and 2-pdr. anti-tank guns.

The Plan as it affects the Union's Air Force, provides for a total of one thousand pilots and some five to six hundred interceptor fighters and bombing-planes. At present the policy is to buy at a nominal price so-called obsolescent warplanes from Great Britain, on the understanding that in the event of war the necessary first-line machines will be supplied from accumulated reserves.

Mr. Pirow has stated that his Government has no intention for the present of building aircraft in South Africa. During his visit to London he paid a tribute to Great Britain's aeroplane manufacturers: "I acknowledge the superiority of British military aeroplanes, which are the best in the world," he said, "and I am here now to buy as many British aeroplanes as the Government can let us have."

South Africa possesses an immense reserve of man-power in the form of its native population; and when announcing the Plan, Mr. Pirow said: "While I feel certain that our people would never sanction the training of non-Europeans in the use of arms, they can be of very great assistance in other ways." Such ways include labour service to relieve the European

troops of all but their military duties, particularly as ammunition carriers right up to the front lines. "Selected labour battalions from the Rand mines, operating under skilled miners with unlimited quantities of dynamite could, if occasion demanded it, literally move mountains," Mr. Pirow asserted.[1]

Foreign Policy

The change in the attitude of South Africa towards the possibility of war is plainly revealed by these recent preparations. Until comparatively recently this Dominion, while ready to co-operate with Great Britain in the maintenance of a naval base at Simonstown and a naval squadron in local waters, was anxious to preserve in Imperial affairs what may best be described as an attitude of benevolent neutrality. Lip-service to such an attitude is still maintained by the Union Government. Introducing the Defence Plan outlined above, Mr. Pirow stated: "We are not bound, directly or indirectly, to take part in any war, in Africa or elsewhere. We shall not take part in a war except when the true interests of South Africa make such a participation inevitable. We as a Government will not even take part in an apparently inevitable war except after the people of this country through their representatives in Parliament have with the greatest measure of unanimity given us an unambiguous mandate to that effect."[2] The Defence Minister remarked that it was not difficult to conceive of circumstances where it would be suicidal not to side with Britain, but it was equally easy to imagine Britain in a quarrel in which nine-tenths of the South African people would refuse to participate. Moreover, it was possible to imagine trouble in which Britain was not interested, but which was a matter of paramount importance to South Africa; for example, where the integrity of

[1] Since this article was written, Mr. Pirow, Minister for Defence, has made his Annual Defence Statement to the House at Capetown. Referring to coastal defence, he said that Capetown, Port Elizabeth, East London and Walvis Bay would have 15-in. and 9.2-in. guns, with H.M. Monitor "Erebus" as guardship at Capetown. The "Erebus," he added, was being lent by the Admiralty and being reconditioned at a cost to the Union of £100,000. She was due at Capetown on the 1st September, and would be manned by the Royal Navy until her South African crew could be trained.

He also said that the Air Force now had five training squadrons, two bomber-fighter squadrons, one railway reconnaissance squadron and one railway troop carrier squadron, each squadron with reserves of twenty-five aeroplanes. Of the 3,000 pilots contemplated in 1934 they had 2,080. There were twelve batteries of artillery in the place of the ten contemplated, and the man power available at short notice had been doubled. The Defence Department was helping the administration of South-West Africa to put its defences in order by supplying aircraft and personnel and by helping to re-organize the police.

[2] "Union of South Africa, House of Assembly Debates," Volume 32, 1938.

Portuguese East Africa was threatened.[1] "In other words, the test as to whether Britain is involved in a war is not by itself of value in connection with South Africa's participation in such a war."

But declarations of such a nature may sometimes admit of ambiguous interpretation—every Government of the British Empire might logically adopt the same attitude, including the Government of the United Kingdom, which would certainly hesitate to declare war without a mandate from the people—and time would only be wasted in analysing their doubtful implications. The essential thing is that South Africa has become aware of her vulnerability, brought about by changing world conditions, and is taking active steps to remedy the position. Whether these steps may imply increased co-operation with other members of the British Commonwealth of Nations is a question that politicians may justifiably hesitate to answer; but it cannot be denied that recent events have made such co-operation inevitable, and this is tacitly recognised by the Union Government.

A speech was made recently by Mr. Louw, a Nationalist Member of Parliament, in which he indignantly declared that General Hertzog, the Prime Minister, was "now associated with Imperialists like Sir Abe Bailey." Replying to this accusation, Sir Abe issued a statement advising "the people of South Africa—Dutch and English, to remain under the protection of the British Navy";[2] and the following day General Smuts, who is a member of General Hertzog's Government, made a speech which was in full accord with that statement. After referring to the dangerous international situation and the widening gap between the ideologies of Fascism and the Democracies, General Smuts said that South Africa could not expect to live in "a fool's paradise of neutrality" which would afford her no protection whatsoever. She could not expect to be unaffected by what was going on. South Africa was a veritable treasure chest of gold, diamonds and coal. Yet her small population of 2,000,000, compared with the 70,000,000 of Germany and Japan, could not decide whether to stand together or to take separate roads. "People were saying that under the circumstances South Africa should cut adrift from her friends, and not avail herself of the protection of the British Navy, but neutrality would be no protection."[3]

Mr. Pirow himself stated during his visit to England that the Union Government held the view that the Munich talks should be followed up to find a permanent basis for world peace, "but it did not favour peace at

[1] It is difficult to imagine Britain taking no interest in the integrity of Portuguese East Africa.—EDITOR.

[2] *The Daily Telegraph and Morning Post*, January 12th, 1939.

[3] *The Cape Times*, January 13th, 1939.

any price"; and from other statements of members of the present administration it might almost appear that, apart from looking after herself, South Africa is prepared to institute and maintain the equivalent of a Monroe Doctrine for the southern half of the African continent. Not only has the Union made it clear that the mandate over South-West Africa could never be renounced, but she has stated that invasion of say, Angola or Mozambique by a hostile Power could not be tolerated. On the basis of this policy the Union has initiated the Defence Plan described above, but it is obvious that the Defence Minister and his colleagues realise that their utmost efforts would be useless without the support of the Imperial connection.

NOTE.—Articles dealing with re-armament in Australia, New Zealand and India will appear in subsequent numbers of the JOURNAL.—EDITOR.

THE PSYCHOLOGICAL EFFECTS OF BOMBING

By Dr. E. B. Strauss, M.A., D.M.(Oxon.), M.R.C.P.

On Wednesday, 4th January, 1939.

Marshal of the Royal Air Force The Viscount Trenchard, G.C.B., G.C.V.O., D.S.O., in the Chair.

The Chairman, in introducing the Lecturer, said that Dr. Strauss, as was well known, was a distinguished psychologist who had made a considerable study of the reactions of people to physical danger.

LECTURE

WHEN I was first invited to address this distinguished Society, the title suggested for my paper was "The Psychology of Bombing." I was so flattered by the invitation that I there and then consented, without a second thought as to what I was letting myself in for. When I had had time to think over the title, it seemed to me that there were only two things one could say: (1) Those who are bombed become very frightened; (2) Those who bomb are also very frightened, and are apt to become very callous. But those two remarks are rather self-evident and do not take three-quarters of an hour to state. In order to pad, I saw myself forced to give a literary paper, which might have borne a sensational sub-title such as "Death from the Skies." In such a paper, I should have been able to point out that the threat of death from the skies has a peculiarly devastating effect on its possible victims, because it re-activates age-old fears in the human breast: Jupiter with his thunder-bolts, Thor with his hammer, Jehovah dealing death and destruction from the Heavens above—against which celestial onslaughts mortal man has no protection. I should then have passed on to consider the psychology of the death-dealing airman, and to argue that he acquires a kind of God-like mentality which raises him above mere good and evil, renders him sublimely indifferent to the sufferings of mere mortals; in fact, that he becomes the victim of a Lucifer-like pride. To illustrate this point, I should have quoted from G. K. Chesterton's Father Brown story, "The Hammer of Thor," and from Bruno Mussolini's book. You will remember how in passages that impress the average reader as quite appallingly callous, the latter describes a kind of Olympian intoxication which

enables him to record bombing operations as an æsthetic, almost ecstatic, experience.

However, the modification of the title of my paper to " The Psychological Effects of Bombing" let me off such a literary excursus, and reprieved you from having to listen to it; for my present terms of reference allow me to read you a paper on what amounts to " Panic and Air-Raid Precautions, Regarded from the Psychological Angle."[1]

There can be no doubt but that the next enemy to wage war against Britain will adopt as his main strategic policy the destruction of the civilian morale in the principal towns. In other words, it will be a war waged against our minds, as wars always ultimately are. It has become a cliché that spiritual disarmament must accompany or even precede material disarmament. That spiritual re-armament must accompany material re-armament does not appear to be so generally recognized. Yet it should be apparent that we must look to our psychological defences, since the world has no intention of disarming, morally or materially, to-day or to-morrow.

Wherever one's sympathies may lie in the Spanish war, one must admit, I think, that if Government Spain is defeated, General Franco's victory will not have been brought about by the collapse of the civilian morale of the Loyalists but through the literal starvation of the people. Wars are won and lost on the psychic front. In an air-raid on Barcelona in which six aeroplanes took part, using high explosive bombs only, there were seven hundred fatal casualties; but Barcelona did not panic. Although we must be prepared for air raids in which five hundred bombers will take part, dr pping thousands of thermite bombs and possibly some gas, as well as hi h explosive, that fact need not determine our defeat if we take suitable psychological precautions against the spread of panic. I have therefore made it my business to obtain as many first-hand accounts as possible from those who have personally experienced air raids on Spanish towns and cities. It may be argued that there are so many differences in the national temperaments of the Spanish and the British peoples, that analogies drawn from the Spanish civil war would be extremely unreliable. But in point of fact the differences are only skin-deep; for when it comes down to essentials, human nature is the same all over the world. It has been stated that the main temperamental difference between the Spanish and the British is that the former may be regarded as being more "bloody-minded" than the latter. I personally doubt whether a nation of bull-fighters can be regarded as more "bloody-minded" than a nation that rejoices in fox-hunting and other blood sports.

[1] In writing this paper, I have borrowed freely from works by Kretschmer, Rickman and John Langdon Davies.

It would be more accurate to say that Spaniards are more willing than the British realistically to take stock of and accept the bloody side of life, in peace and in war. For instance, I have been given a description of Spanish children gazing interestedly but quite unmoved at sensational propaganda posters photographically depicting the mangled corpses of children. The same observer relates that after a certain politician had been murdered in the streets of Barcelona, the blood was not immediately swabbed up as it would have been in England, but was left to dry, whilst in the meantime young girls belonging to the political party in question dyed white carnations in the blood of their hero to retain as souvenirs or relics. There is not the slightest qualm in exposing the children of Spain at war to the vision of the realities of war itself; and I have no doubt that after repeated air-raids, the civilian population in Britain will become progressively less squeamish about what might be called the "blood and guts" aspects of life and death.

In the meantime we must prepare the way for air-raid-mindedness; if severe panic with its political consequences which might lose us the next war is to be avoided.

What is panic, how does it arise, and what are its manifestations? Panic might be defined as a condition in which the highest degree of dread is experienced, resulting in the temporary severance of social ties and loss of self-control. Although psychologists find it convenient to distinguish various instincts and to group and classify them in accordance with the biological purposes which they appear to serve, yet all the instincts are but aspects of one primal instinct—the life instinct. The life instinct may be said to reside in every living cell in the organism. The psychic order of experience comprises anything and everything which is experienced by the organism as a unified structure. The experience, as any students of psycho-analysis amongst you will readily appreciate, need not necessarily be conscious, for beneath the surface of consciousness one leads a life of psychic processes of all kinds, which we term unconscious. But there is an order of vital events which are not fully psychic, in so far as they are not fully experienced by the personality as a unified structure. We can term that order of events "psychoid." Some of the phenomena associated with panic reactions must be regarded as psychoid rather than psychic. Panic may result whenever there is a serious threat to life, direct or indirect, real or fantasied, conscious or unconscious. When the threat to life is very sudden and intense, the immediate result may be a sudden descent into the psychoid order of experience by way of certain primitive psychological mechanisms.

One of the many services performed by the psycho-analytical approach and allied disciplines has been the impetus which has been given to the

study of psychology from the genetical point of view. We can now see that like the rings in a tree-trunk, the human psyche structurally records its evolution from the point of view both of the history of the species, and of the individual. So that the adult XXth Century psyche contains the potentialities of feeling—and behaviour-patterns inherited from our pre-human ancestry, from primitive man, and from infancy and the nursery.

What are the ways in which panic of the most primitive kind can manifest itself? In the case of adult civilized man, we find that a very sudden rush of overstrong stimuli is associated with an immediate paralysis and exhaustion of the most recently evolved psychic levels, and that the level immediately below takes control of the whole motor apparatus. A welter of exaggerated, instinctive, tentative movements takes the place of calm (i.e. motionless) deliberation. That is the way the acute terror and anxiety phenomena known as *panic* arise; examples of crowd panic are observable in sudden disasters such as earthquakes, wars, mine accidents, and theatre fires. Panic-stricken crowds behave exactly like a swarm of *infusoria* in warm water; they exhibit a storm of aimless movements, blind rushing hither and thither, crushing against each other, hustling, and shoving. If one of these exaggerated movements succeeds in removing an individual from the danger zone (e.g. from collapsing houses), that movement shows a tendency to persist, and calm gradually supervenes on the motor storm with a return to purposive deliberation. However, it is not only the motor activities that subserve flight which are mobilized by such acute anxiety situations; all the reflex and vegetative activities are brought into play—rhythmical movements such as tremor, spasm, and tics, violent and ill-regulated irritative activities of the heart and blood vessels, the digestive organs, and all the organs of secretion.

Mass psychology provides us with examples of similar motor storms occurring in states of strong emotion other than panic—anger, enthusiasm, political frenzy (under the suggestion of fanatical orators), religious ecstasy. Here too these storms can reach the magnitude of convulsions, dancing and "speaking with tongues." History shows that such storms were more readily and frequently started amongst primitive peoples than nowadays. Also, children, women, and mental defectives are more subject to panic and hysterical reactions than are mature men. (*Kretschmer.*)

In addition to the reactions just described, which are associated with excessive, ill-co-ordinated movements, panic may produce another set of primitive defence reactions, which are characterized by immobility. These reactions are biologically comparable to the "sham death" reflexes exhibited by so many animals, both vertebrate and invertebrate. Psychiatric casualties in air-raids will thus tend to fall into two main groups—the mobile, who run riot, and the immobile, who are stupefied by shock.

Each group will require to be differently handled, both in the interests of the individual patient and to prevent the spread of panic by psychic contagion.

As a direct result of panic reactions, we also meet with the following symptoms: severe headache, insomnia, breathlessness on walking, skin eruptions, high fever with great oscillations of temperature, theatrical behaviour, which in individual cases goes so far as extreme childishness and nonsense-talk. In some cases acute panic is followed by twilight-states in which criminal acts may be performed automatically.

This brief account of the medical aspects of panic will have forcibly reminded some of you of the hysterical reactions. Is there, in fact, any difference between hysteria and panic? Although the two groups of reactions imperceptibly merge one into another, yet a useful distinction can be drawn: the panic reactions may be regarded as being predominantly psychoid, the hysterical reactions are definitely psychic. In panic only the more primitive components of the personality participate; in hysteria much higher levels of the total personality contribute to the morbid picture. Hysteria is in a much truer sense purposive, seeing that the element of secondary gain, semi-conscious or unconscious, now controls the situation and acts as a fixator of the physical or mental disorders. If properly handled, the majority of the cases of panic-psychosis can be of short duration, and the purely egotistical factor of secondary gain can be prevented from giving rise to the "will-to-sickness." This must be the guiding principle in war-time psychiatry.

So far we have considered what happens to an individual when the psyche has retrogressed to a sub-human level, i.e. when the organism is acting without a central government with co-ordinating control over its parts. But panic need not drive one to those depths; there is an intermediate stage in which the unconscious mind takes control, when we are still dealing with psychic rather than psychoid events. I assume that the curricula of the various Staff Colleges include a course of lectures on the structure of the psyche; there is therefore scarcely need to remind you that beneath the surface of consciousness one leads a life of mental processes of all kinds which is roughly speaking at the level of the jungle and the nursery, in other words instinct- and magic-governed. The archaic and infantile messages which are continuously bubbling up into consciousness are usually edited and controlled by the rationally-governed conscious levels; but in a state of panic the faculty of reason is temporarily suspended, and social or group ties are severed.

"Group ties are an acquisition, not an inheritance; they develop in infancy during the period of great dependence and are influenced by the child's need for help from its parents in obtaining control over its own

impulses. Thus conscience is partly acquired from the environment and is developed for dealing with the instinctual part of the personality.

"Group bonds and self-control are closely connected at the beginning of mental life, and in adult life in time of danger the close connection is once more apparent. The early attitude to the parental authority is in later life displaced on to the Government (Nation), or the G.O.C. (Army), Pope (Church), etc., and these must fulfil in some measure the ideals attributed, in the unconscious, to good parent figures; these must (i) *govern*—i.e. keep order and dispense justice fairly, and (ii) *protect*—i.e. supply needs and distribute them fairly, giving equal opportunity to each member of the group. When these conditions are fulfilled, the authority of the group is accepted as a good parent figure (in the unconscious); the members unite in respect for their authority, and their friendly relation to one another is facilitated." (*Rickman.*)

We can therefore see that in order to prevent the spread of panic amongst the civilian population, and to enhance the development of air-raid-mindedness, there must be a perfect sense of solidarity between the Government and the governed. The Government should not be regarded by the governed as "the people who allow us to be bombed." We are the Government and the Government is ourselves. If we look back on the recent crisis, we must be prepared to admit that that was not exactly the attitude of the British public. People felt not only that the Government was something older, something more adult than themselves, but that the Government was not in a position to exercise its parental functions in the way of protection. People had an uneasy feeling that the truth was being kept from them. Every medical psychologist knows the dangers of fobbing children off with stories of gooseberry-bushes and storks (or even doctors' black bags) when they seek information about what are popularly known as "the facts of life." The Government should equally realise the dangers of telling fairy-tales to the public about the facts of life and death. Up till now the public have been fed with precisely such fairy-tales—pretty stories of gas-masks, gas-proof rooms, auxiliary fire brigades, and the like. If the public finds that it has been deceived, it will panic and rise up against its untruthful parents. From the start the Government must be prepared to disseminate the truth; the story it will have to tell will be grim, but grim will be spelt with one "m."

We should be told that London as it exists to-day is untenable in a modern raid. We should be told that it is the most easily burned city in the world, and that it must be regarded as a potential section of the front-line trenches from the outbreak of war onwards. We should be told that no air-raid is ever likely to direct its bombs on military objectives,

for the true objective of air-raids is the nerve centres of the man-in-the-street. Air-raid-mindedness demands that we should be mentally prepared to face a constant succession of air-raids which will occur at unknown intervals without adequate warning. It is not a question of shutting our eyes and gritting our teeth for a few hours. We as the public should be told unpleasant facts already in the possession of technicians. For example, a certain building in Barcelona appeared to have received two direct hits with high explosive bombs within two hours. Now according to the mathematical laws of probability, the chances of this happening are several millions to one against. It transpired later that two bombs had been dropped at the same time, one timed to explode immediately, and the other with a two hours' lag. We should be told that these tactics will undoubtedly be repeated in order to involve the rescue parties in destruction. We must be told that during air-raids many of us cannot possibly function as we shall have to function and at the same time receive protection from external danger. The theory that there is a possibility of protecting everyone is a negation of the fact that in modern warfare the civilian population is in the front line trenches.

If we are told the truth beforehand, however horrific, in other words if we are treated as potential adults, there will be less chance when we are put to the test of the immature levels of the mind taking control and compelling us to behave like terrified children. Motor mascots only provide a magical protection against road accidents; 2s. 11d. gas masks and reminders to include a portable commode and a screen in a room which has been rendered gas-proof by means of gummed paper are magic, and pretty poor magic at that.

Another factor which is going to fray the nerves of the civil population and release panic is the noise, not only of bursting high explosive but also of our own anti-aircraft guns. To the nervous person the psychological damage, owing to the noise, would be almost as great, even if every bomb were a blank. Further, the very large area of negative pressure in the neighbourhood of a bursting bomb would give rise to innumerable cases of burst ear-drums with alarming bleeding from the ears. Pads of waxed cotton-wool, such as "auropax," would be a useful precaution against both these insults to the organs of hearing; and the civilian population must be instructed not to be frightened by its own air-raid precautions.

Another point on which the public should be enlightened beforehand is the fact that the first warning of an air-raid is likely to be the dropping of the first bomb. By the technique of silent approach, aeroplanes rise to a height of thirty thousand feet or more about a hundred miles from their objective, which they reach silently by means of gliding. In any case,

it is questionable whether a wailing siren is, from the psychological point of view, a suitable warning of the approach of hostile aircraft. The warning should suggest a call to action rather than an appeal to our archaic fears. The wireless could be used to great effect, both for providing warning of approaching aircraft and for instructing people what to do throughout operations. The calm and confident voice of a B.B.C. announcer issuing positive instructions would tend to avert panic, whereas the wailing of sirens would tend to increase it. I have been told that the equipment and organization exist in Germany for the erection in every important street and public place throughout the country at a moment's notice of batteries of loud-speakers. It might also be a good idea for this country to accumulate great stocks of battery-operated wireless sets, for the supply of electricity from the mains would always be breaking down, and broadcasting is to-day a nation's most potent weapon of propaganda.

Another factor that would spread alarm and despondency and lead to panic would be the breakdown of the civilian medical services. In our present state of unpreparedness this would undoubtedly occur. The thirty-two odd hospitals in London which are ear-marked by the Government for first-line casualty clearing work would rapidly become untenable as they are unsuitably constructed and offer excellent targets. We have read a lot recently about Government plans for the construction of vast underground shelters for the civilian population. These will prove impracticable owing to an infinity of reasons, and, if they existed, would be useless because people would not have time to reach them. On the other hand, the construction of a great number of vast underground casualty hospitals would serve to bolster up the civilian morale and prevent the spread of panic as well as serve their more obvious purposes.

It is impossible to estimate the number of psychiatric casualties amongst the civilian population in a future war. According to some, there are likely to be three psychiatric to one physical casualty at first. The Spanish war, however, has shown that the civilian population can become accustomed to air-raids with all their attendant horrors and danger to life, with the result that the number of acute psychiatric casualties is greatly reduced in the course of time. Nevertheless, a very unpleasant form of chronic anxiety state would appear to be becoming general in Barcelona, a state which seems to be engendered not so much by the air-raids themselves, as by the population not knowing from one hour to another whether a raid is to be expected. At the beginning of the late war the Government provided hospital accommodation for the psychiatric casualties in the fighting Services to the extent of, I think, beds for six officers and sixteen other ranks. By the end of the War there were seventy-five thousand Service patients accommodated for,

suffering from various forms of war neurosis. I believe my figures are correct, but I cannot vouch for them. It would not seem that we have learnt from our past experience, for at the present moment, to the best of my belief, no workable scheme which could be put into instant operation for the disposal and treatment of psychiatric casualties amongst the civilian population has been accepted by the Government. A Committee of the most knowledgeable and influential London psychiatrists has been meeting unofficially since the September crisis to draw up suitable schemes for tackling the problem. The request in the proper quarter that this Committee should receive some kind of official status, or its chief members be incorporated in some officially constituted committee met with the Government variety of what I believe is nowadays known as a "raspberry." And yet, I suggest in all seriousness that on the efficiency of the country's psychiatric services may depend the issue of the whole war. There exists no official list of psychiatrically-trained doctors, there has been no official talk of recruiting special sections for the V.A.D. and the St. John ambulances for training under peace conditions in the elements of mental nursing and the handling of psychiatric casualties in war-time. And yet, to quote the final words of John Langdon-Davies's recent book on air-raids: "The fact is that 'silent approach' is already being used against us. We feel the forces of darkness stealing up in the obscurity of an uncertain future. Now is the time to stop the seeds of panic from germinating. Do not let us be frightened by the need for A.R.P.; let us rather be intelligent in finding constructive possibilities even there."

So far we have been considering merely the negative psychological effects of bombing. Is there a positive side? As I said earlier in my paper, loyalist cities in Spain have been submitted to intensive bombardment from the air for a considerable time in the absence of material defences, and yet the morale of the civilian population in these cities is still high. One might add that the Japanese have adopted the same air tactics against Chinese cities as have General Franco's German and Italian allies in Spain, and yet Japan has not finished with her war. How can this be psychologically accounted for? The answer is simple. The bombed become automatically united in a common hatred and terror of the invisible and intangible enemy from the skies. Observers state that one of the most remarkable effects of the bombing of open towns in Government Spain has been the welding together into a formidable fighting force of groups of political factions who were previously at each other's throats. This consideration leads one to think that the psychologist might have a suggestion of great strategical importance to offer, which might affect the whole conduct and issue of a future war. It might be thought obvious that if Eastland bombs the capital of Westland, Westland should return the compliment in kind; but I doubt if that is psychologic-

ally, and therefore strategically, sound. In the countries which are likely to be Britain's future enemies, the psychological unity amongst the governed is only skin-deep. In time of peace, the underground opposition is and must remain inarticulate, but with suitable treatment it could be rendered sufficiently dynamic to wreck the enemy countries from within. The rulers of those countries would start a war with the conscious intention of dealing with internal opposition by directing the people's aggressive impulses against an external common foe, but they need not succeed in that object. The one thing which could be calculated to unite those countries spiritually and to give them the conviction that they were fighting a Holy War would be air-raid reprisals on the tit-for-tat principle. As a psychologist, I would venture to disagree with Earl Baldwin in his bomb-for-a-bomb version of Talion law. Let us bomb enemy cities by all means, but let us bomb them with millions of leaflets calculated to destroy their morale and encourage the underground opposition. However many buildings in the towns of Eastland we may destroy with high explosive, we are not necessarily going to win a war on that account; whereas if we select the right psychological weapons, our victory is certain if our cause is just. If we put our psychological defences in order now, so as to be able to withstand the first air-raids without panicking on the grand scale, the enemy will find to his cost that he has committed a grave strategical error in bombing us at all.

I have already indicated some of the ways in which we can attend to our psychological re-armament. It will have become clear that the measures of psychiatric prophylaxis of widest application depend on one principle, namely, the inculcation of group loyalty and the sense of a common aim. Unfortunately we are not in a good position at the present day to bring this about. It is true that there was much that is false and ridiculous in the "old school tie" spirit; but it contained immense potentialities for group loyalties of the right kind. Now that the "old school tie" has come to be associated by so many people with the Western Brothers and Colonel Blimp, our psychological defences are correspondingly impoverished. In the same way, the absence of belief in revealed religion which characterizes the XXth Century has left yet another gap in our psychological defences, with nothing to fill it. The Spartans, in order to prevent the spread of panic, organized their regiments as bands of lovers; but no one could seriously suggest the re-introduction of idealised pederasty as a step towards psychological re-armament.

"In air-raids," as Mr. Langdon-Davies well puts it, "it is a race between the attack attempting to smash the morale of the people, and the defence trying to keep going the normal social contacts of the group. Victory will go to the side which builds its group loyalties on the surest founda-

tions—a government which can identify itself with the people, and a community made up of individuals who have learnt to trust one another." To assist in the formation of groups and the building up of group loyalties, and at the same time to aid in the evacuation from the city front-line of all those who are not required, or who are not fit to stay at their posts, Mr. Langdon-Davies proposes the extension of the Holiday Camp idea. "To leave one's home because of bombs is a hard lot; to be foisted on an unwilling host is an added cruelty. But if the camps are already known, if they are places where 'the Pictures' have already been visited, food is good, and there are dance halls, amusement parks and other apparatus of enjoyment, the exodus from danger will be to a place of pleasure as well as safety; it will draw, not repel. . . . The *Kraft durch Freude* movement does not imply a totalitarian ideology, it has begun in England already and should not stop, as well it may if not encouraged, at 'brighter museums.' But ways and means apart, the recommendation that the rest camps should be places to which people *return* in time of danger is psychologically sound. Anything which is both constructive to the health and a preservation from air raids deserves the best consideration. Camps of course may be hit, but with trenches as protection from the blast and splinters, and with low population congestion, the mortality per bomb should be small, while the panic risk would almost certainly be less than in towns and in underground shelters." (*Rickman.*)

We can learn yet another practical lesson from Barcelona, which has organized a blood transfusion group, eight thousand strong. These are indeed a band of "blood brothers" in every sense of the term. Similar groups could be organized on the grand scale in Great Britain, and everyone's blood group should be ascertained in time of peace. I, for example, belong to blood group 4; I am what is known as a "universal donor." I wonder how many of you know to which blood group you belong. I would not have you think that I am in possession of that particular piece of knowledge about myself, because I have been mixed up in a paternity suit!

So far the suggestions which I have had to make with regard to filling the breaches in our psychological defences have been practical and concrete. I should like to conclude this paper with some suggestions made in more general terms.

The time at our disposal may be exceedingly short, and something must be done—and that quickly. Group-psychologists in certain countries have discovered that the quickest method of uniting a nation is by the inculcation of a common hate. It is my belief that although the inculcation of a common love does not appear to give such dramatically quick returns, yet the modification of the ego-ideal in the individual and

the identification with the group-ideal brought about thereby, proves to be a much more reliable spiritual defence in the last analysis.

The Government should start a propaganda campaign on a grand scale to create a new form of patriotism. The British citizen should be made to feel that his country is prepared to stand for and stand by real spiritual values—justice, fair play, the rights of the individual and the dignity of the individual. And Democracy must come to be identified with these ideals and not equated with any particular form of government or administration.

Every civilian should have his particular duty in war allotted to him beforehand. A knowledge of what to do and where to go to do it, coupled with means of reaching the task required of him as soon as possible, is the best preventive of panic and war neurosis. The conviction that one's own particular contribution to the national struggle is all-important and, humanistically speaking, sacred, is the surest means of preventing a man from reverting to sub-man, when attacked by sub-men.

DISCUSSION

ADMIRAL A. CRAIG-WALLER: The Lecturer indicated, I think, that subterreanean air raid shelters were no use because they could not be reached in time; but I have heard that they are *the* great safeguard in Barcelona and other Spanish cities and have been most effective. I presume that they have been effective not only in preventing loss of life and injury, but also in allaying panic.

MAJOR N. MACROBERTS: Some months ago I had the advantage of visiting the Spanish cities, and a slight experience of air raids in Barcelona. My impression was that the psychological effects are entirely local. A bomb might drop at Charing Cross, but here we might not even hear it. If we did not, we should not be disturbed; if we did, we should naturally be seriously disturbed.

The Lecturer spoke rather slightingly, I thought, of the protection afforded by the civilian respirator. I suppose that in the great crisis week most of us were engaged in issuing respirators and fitting them to the civil population. Men women and children waited for hours in the pouring rain; as soon as a respirator was fitted and placed in their hands they went off thinking that they had complete and absolute protection against anything that might happen. That was my own experience, and personally I have a supreme faith in the civilian respirator; it will give every possible protection against every known war gas. I go so far as to say that because the Government did take the step of issuing respirators and training large numbers of people in the dangers of poisonous gas, we have eliminated from the forms of attack one dangerous potential menace. We are not afraid of it now; let it come; we are protected.

If we will only go further and provide some form of protection against high explosive bombs by underground shelters, the strengthening of basements in residential areas, trench systems, underground dugouts, the use of tubes and so on, and can get the people there and out again without crowding and jamming, I do not feel that we should have too much to worry about.

So far as Spain is concerned, we ought to bear in mind that the raids were not only on Barcelona, but that the Republican forces have also bombed their opponents' cities. With regard to the attitude of the population in these various cities, I remember that on one occasion during a very serious raid at night on a particular town, couples were seen in tender embrace sitting on the seats in the public squares, oblivious and contemptuous of the danger of that form of mass terrorism from the air.

LIEUTENANT-COMMANDER J. H. FORDHAM, R.N. (London Fire Brigade): I should be grateful if the Lecturer could give me some indication of whether it is a recognised psychological fact that where women work alongside men it has a valuable psychological effect on both sexes. In the Auxiliary Fire Service we have a great many women—many thousands—working in close co-operation with men, and some doing identical jobs; we believe that they will have a valuable influence on each other.

THE LECTURER

With regard to the first point raised, as to the value of air-raid shelters: I treated the matter from the psychological rather than from the material point of view, because I am not competent to speak about material protection from danger; but according to such information as I have in my possession, air raid shelters in Spain exist, not as places of refuge for the civilian population to rush to when an air raid occurs, but as safe places for people who are engaged in vital services to work in. For example, there is a vast shelter in Barcelona devoted to the work of the blood transfusion service, and there are other underground casualty clearing stations. Even from the purely practical point of view, however, it seems to me to be quite impossible to provide effective protection from air raids for nine million Londoners.

There is another point which I did not mention with regard to the psychological effects of taking refuge in air-raid shelters, and that is the claustrophobic effect. Claustrophobia is much more common than is usually believed. Many thousands of people are potentially claustrophobic, and if they were shut up in low and narrow underground tunnels and crowded together, they would be likely to suffer from claustrophobia, which would be likely to spread by psychic contagion and lead to panic.

Major MacRoberts remarked that an air raid was essentially a local alarm which would not spread in rings—like the rings that result when a stone is thrown into water; but I think that that kind of spreading would be more likely to occur in the case of air raids on London, because the British are very much more urbanised than the Spanish. We depend to an extent which we hardly realise upon drains and sewers, on taps, on electric light, on gas and on telephones; and if what we regard as these essential services were to break down we should be likely to panic because we should be faced with a completely unfamiliar world. The Spaniards, on the other hand, can revert much more quickly and much more safely to the conditions obtaining in primitive agricultural communities.

The final question, whether it is psychologically sound for men and women to work together in operations concerned with air raids, is a difficult one to answer. On the whole, I should be prepared to say that from the psychological point of view such co-operation would be unsound. It is my belief that the cameraderie which exists to-day in certain Western civilisations as between men and women is a very recent acquisition, and is only skin-deep. It might not stand the test

of real biological strain ; for, biologically speaking a man likes to feel that in a time of great danger his women and children are safe ; that has been the experience in Spain. I would say, therefore, that probably it would have a bad effect on the morale of men engaged in important operations during air raids if their womenfolk were to be exposed to the same dangers.

THE CHAIRMAN

We owe a debt of gratitude to the Lecturer for his intensely interesting Lecture. He has touched on a very large variety of points under the heading of " The Psychological Effects of Bombing," and I will not keep you for any comments of mine, though I feel that I could talk for a long time on the various headings he has put forward.

I have always disliked the word "psychological"—perhaps because I had difficulty in the past in spelling it—and I prefer the shorter word "moral"—the moral effect of bombing. I think that we are apt by using these long words to lose a sense of proportion about what is going to happen to our nerves when we are being bombed. I must say that I was surprised that no one adduced the point that people are rather like a flock of sheep—where one goes the others will go. So far as the moral effect of bombing is concerned, I often think that if at every works, factory or other big place there were a leader in whom people believed, and if that man—who might perhaps be a good football player—when the bombs began to drop were to say " I'm damned if I'm going to run away," that would have its effect. On the other hand, if you had a man who said " I'm off ; they've done nothing to protect me," a lot of men would follow him like a flock of sheep. The moral effect depends upon keeping an eye on those who are remaining calm.

The Lecturer did not refer to the curious fact that every bomb that is dropped from the sky seems to be aimed always at a woman or child. I sometimes wonder whether they have a magnet in their heads which attracts bombs ! He did say, however, that we ought not to go in for reprisals. But whatever we do, it will be called reprisals ; if the enemy goes for the Woolwich Arsenal and hits the houses round it, we shall say that he aimed at the houses, and if we go for the same kind of objective and hit the houses round about, he will say the same of us.

I sometimes think that people become nervous if they are being bombed and there is nothing to make a counter-noise. If you can fire off guns back at the enemy, it has a most exhilarating effect. Not long ago I went to a firework display at which there were certainly fifteen thousand people. For seven minutes we heard guns, mines, bombs, mortars and so on, and the whole ground shook ; it was certainly most inspiring, and I felt that if it had been my side which was making all that noise we should have been very brave !

The customary votes of thanks to the Lecturer and Chairman were carried by acclamation.

AIR CO-OPERATION WITH THE ARMY

By Group Captain A. J. Capel, D.S.O., D.F.C., R.A.F.

On Wednesday, 1st February, 1939

Air Vice-Marshal A. S. Barratt, C.B., C.M.G., M.C., in the Chair

The Chairman, in introducing the Lecturer, said that he had commanded an Army Co-operation Squadron for five years, had been an Instructor at the Staff College at Camberley, and Commandant of the School of Army Co-operation. He was now at the Imperial Defence College. He was therefore well qualified to speak on the subject to be dealt with in the Lecture.

LECTURE

THE chief requirements of the Army in the field as regards co-operation and assistance from the Royal Air Force working with it can be conveniently discussed under five main headings:—

(1) *Reconnaissance*—provided by Army Co-operation squadrons and by certain bomber squadrons which may be detailed to carry out Strategical Reconnaissance.

(2) *Attack of Military Objectives*—carried out by bombers and fighters.

(3) *Protection*—which implies preventing the enemy from doing to you what you hope to do to him, is mainly carried out by fighters, but all aircraft in their general role will assist in this object by the destruction of enemy aircraft as and when opportunity occurs.

(4) *Supply and Movement of Troops by Air*—carried out in certain conditions by specially allotted bomber-transport squadrons, or in emergency and on a very small scale by almost any type of aircraft except fighters.

(5) *Communication*

The whole air force which accompanies the Army is divided into two different categories. Firstly, there are those aircraft which in peace time form what is known as "the R.A.F. Component with the Field Force." This comprises all Army Co-operation aircraft and certain bomber and fighter aircraft—the bombers for strategical reconnaissance, the fighters for general defence. Secondly, there will probably be allotted in strength varying according to different circumstances a force of bomber and fighter aircraft designed to be of sufficient strength materially to assist the Army in achieving its object, having in view many factors such as the

size of the Army engaged, the enemy, the enemy's air resources, the theatre of operations, and many factors of this kind. These bombers and fighters have to be found from the Home Defence Force, and therefore another big factor which will come into play is the extent of the probable air threat to this country. Bomber-transport aircraft may also be allotted in certain campaigns to accompany the Army should it be considered that opportunities will occur for their use in this particular role.

The command of all these air forces is vested in the G.O.C.-in-C.; in other words, the Army Commander will have as his chief Air Adviser and also executive commander of the air forces an Air Officer Commanding who will have his own headquarters but who will be closely attached to the headquarters of the Commander-in-Chief. The Air Officer Commanding will normally keep under his control all aircraft with the exception of the Army Co-operation Squadrons, which will usually be decentralised under the command of Corps, and even down to Divisions should there be any Divisions not under the direct command of Corps.

RECONNAISSANCE

It is obvious that the commander of any military force requires the best information that he can possibly obtain as to the enemy's dispositions and movements out of sight of his own leading troops. In other words, in the time-worn phrase, he wishes to see as far as possible over the top of the hill in front of him. The information which he will get from his aircraft supplements that obtained from the many other sources open to him, and he will require this information probably from the furthest possible radius of the aircraft allotted under his command. That reconnaissance up to the furthest limit is known as Strategical Reconnaissance, and it may be expected to begin some fifty miles in front of the leading troops. The actual distance to which it goes back should cover the enemy's lines of communication and more important bases, if they come within the limit of the radius of the aircraft. One can well see that at the present day in a war between Japan and Russia, for example, it would not be possible for Japan to cover the whole of the length of the Russian line of communications, supposing that line starts somewhere in Russia-in-Europe. On the other hand, the Russians should well be able to cover from their most advanced aerodromes the whole of the Japanese line of communications from and including Japan itself.

This Strategical Reconnaissance is designed to give the commander in the early stages the best possible information as to the enemy's strength, deployment, and advance; and thereafter during the course of a war it will keep him informed as to the enemy's activity on the various lines of approach, whether by rail or road, the rough strength of reinforcements which he may be bringing in to the theatre of operations, and by an

examination of dumps, both ammunition and supply, it should give the commander a fair idea of the size of contemplated operations on his front. It is unlikely that Strategical Reconnaissance can be carried out with great regularity, nor is it necessarily desirable that it should be attempted owing to the danger of the reconnaissances being intercepted by enemy aircraft, but continuous inspection of the whole of the enemy's rear lines of communication at infrequent intervals, both by day and by night, and with the help of the camera, should be sufficient to show alterations in the enemy's system of supply and strength of forces.

Next we come to what is known as Tactical Reconnaissance which, quite roughly, is within the fifty mile limit which I have already given as the inner boundary for Strategical Reconnaissance, and which comes right back to the leading troops. This Tactical Reconnaissance area is of course concerned more with smaller movements of the enemy, with movements to and from railheads and the supply situation in front of railheads, the actual movements of reserves and their location, and the obtaining of information as to the enemy's flanks. The picture thus secured should enable the commanders of the more forward elements to forestall the enemy on their front, or at any rate to know fairly accurately what is his strength and his probable plan of campaign. For this reason the aircraft which carry out this reconnaissance—the Army Co-operation Squadrons, are, as I have already said, normally placed under the command of Corps. There are at the present moment two types of squadrons carrying out this Tactical Reconnaissance, one of which trains more for night reconnaissance and for the more distant Tactical Reconnaissance, while the other trains for Tactical Reconnaissance close in to the battle front, and is also concerned with the next type of reconnaissance to which I am going to allude, namely, Artillery Reconnaissance, which, once the battle has been joined, is very often of primary importance and if well carried out may have the most decisive effect.

Artillery Reconnaissance naturally varies with the number of targets that the enemy is likely to provide (chiefly his guns), and the amount of artillery disposed by our own Army. But, generally speaking, the larger the amount of artillery available and the greater the number of targets that the enemy are likely to provide the more Artillery Reconnaissance will be required if the greatest use is to be made of our own artillery fire.

In addition to these types of reconnaissance there is Photographic Reconnaissance, and that may be undertaken by aircraft carrying out any of the forms of reconnaissance which I have mentioned, or a special flight may be ordered to take some definite area or pinpoint. But the taking of photographs is part of the duties of all aircraft whether the object of the photography be tactical, strategical or to take photographs of the results of bombing attacks.

Before leaving reconnaissance I should like to emphasize one thing; there is in the minds of some commanders the idea that reconnaissance aircraft can be used for other duties, such as low-flying attack or the carriage of supplies; but I would like to emphasize that commanders are very much dependent on air reconnaissance for a great deal of their information, and the diversion of Reconnaissance Squadrons from their proper role to any other task, however much it may appear that an advantage is being gained momentarily, will probably result in the commander later being left with insufficient aircraft to gain the information he requires by reconnaissance, and he may be sadly short of Artillery Reconnaissance aircraft at the crucial moment.

THE ATTACK OF MILITARY OBJECTIVES

I am going to couple the Attack of Military Objectives with the third requirement of Protection, and I am going to deal with fighters before I deal with bombers, as I think that it will make things clearer if I take them in that order.

It must be laid down quite definitely that the main task of the fighter aircraft is to destroy enemy aircraft, and it must equally be laid down, though not quite so definitely, that it will probably be better to attempt to shoot down enemy aircraft in the air than it will be to destroy them on the ground; and yet a third point which must be emphasised is that fighters used offensively will not only produce better results but will have a greater effect in destroying enemy morale. It therefore follows that fighters should be sent to those places where enemy aircraft are most likely to be found in the greatest numbers, and it seems that the best areas for the employment of fighters will be as follows:—

Offensively—

(*a*) Over enemy aerodromes;
(*b*) Over point of arrival of our own bombers;
(*c*) Over areas of our own reconnaissance aircraft.

Defensively—

(*a*) Over probable enemy bomber targets;
(*b*) For close protection of important fleeting targets.

Taking these one by one, it is obvious that enemy aircraft must be found at their own aerodromes, and also if the enemy can be caught just taking off or just returning to his aerodrome he is probably at the greatest disadvantage, because, having just taken off, he is not really settled into the saddle and is not quite warmed up to his flight, and, if returning to his aerodrome, equally his morale is low: he has just come back from a long flight, possibly has been attacked on the way, and just as he thinks he is going to land in safety he realises that he has to fight for his life. On the other hand, enemy aerodromes may be out of range of our fighters,

and if they are, then the fighters have at any rate definitely achieved something in that the enemy to cross our lines must carry out an enormous amount of wasted flying, both in miles and in time, before he begins to approach his objectives, and this must eventually have a wearing effect both on pilots and on engines and aircraft.

The second place where enemy aircraft may be expected to be found will be round about those targets which our bombers are attacking, and therefore that is another point to which fighters might profitably go when looking for a fight. If the points that our bombers are attacking are really important to the enemy—that is to say, if our intelligence is good and has picked out the right targets, the enemy must try to defend them, and in addition to assisting our own bombers to deliver their attacks the fighters will be discovering enemy aircraft to shoot down.

Again, it is presumed that the enemy will not allow our reconnaissance aircraft to work in freedom, and therefore that is another area where enemy aircraft may be expected to be found, trying to shoot down, or at least drive off, our reconnaissance aircraft.

I have called all this the *offensive* use of fighters in that it means that the fighters have to cross our own front line to get to these areas. Next, *defensively*, they may have to be used to defend certain vital targets which are being attacked by enemy bombers; in fact the reverse role in the area which I mentioned before as the point of arrival of our own bombers. In other words, what we do to the enemy, the enemy will try to do to us, and if we cannot destroy enemy aircraft in those areas which I have already mentioned, it may be necessary to put up some form of close defence; but to be effective and to avoid enormous waste of flying this method does require really good warning. For the most extensive use of fighters defensively, of course, the defence of this country is the biggest known example; but, as I think is well known to you, the system depends to a very great extent for its efficiency on the reporting of enemy raids in time for our fighters to get up and intercept them.

Lastly, fighters may be used defensively for the close protection of important fleeting targets; that is really an extension of their use over probable enemy bomber targets. In the first case I mean to imply those targets which the enemy is actually attacking, and in the second case I mean to imply those targets which it is essential that he should not attack with any degree of immunity. These targets it is hoped will normally have to be protected for periods of short duration, e.g., troops passing through a defile.

Low Flying Attack

In the past it has been considered that the low-flying attack is the duty of fighter aircraft and that the weapon employed is the machine

gun rather than the bomb. Nowadays, however, the role of low-flying attack has largely passed to the bomber, and the weapon to be employed will be the bomb. There is, however, no doubt that low-flying attack is a legitimate role for aircraft under certain circumstances. But I would suggest that before diverting aircraft to this role a commander should ensure that he has sufficient aircraft carrying out their normal roles to ensure that the air is kept reasonably clear of enemy aircraft, that sustained attacks on enemy vital targets are not interrupted, and that he is satisfied that his own rear services are reasonably protected.

If these conditions are fulfilled and he still has squadrons to spare, then it is probable that they may be used with some effect in low-flying attacks ; but two things should be realised—firstly, that the moral effect is likely to be greater than the physical effect, and, secondly, that casualties may be heavy. He must therefore judge whether in his opinion the low-flying attack will bring results commensurate with his probable losses. Next, aircraft may certainly be used in low-flying attack when it is desired to turn pursuit into a rout. This admittedly is a rather hackneyed phrase, but there will be occasions at the end of a war, or on a smaller scale at the end of certain definite operations, when you may have your enemy thoroughly demoralised, and then the extra weight of air attack, in addition to mechanized forces following up his retreat, will probably make victory decisive and may prevent the enemy re-forming and giving further resistance on some well or partly prepared line farther back. Again they may also be employed on special occasions in attack and defence. These occasions will probably be fleeting opportunities, may be hard to see and may be difficult to seize, but where they can be brought off they may have a very good effect. Such occasions would be in a situation such as March, 1918, when there is considerable confusion in retreat, and every effort should be made to stop the enemy advancing even for a short time in order to allow our troops to re-form on some sort of line. Again, in attack there might well be occasions when a very short and intensive attack by low flying aircraft may just help our own troops to overcome the first and second lines of enemy resistance, after which they may well advance over a considerable distance. Such an occasion might be when an important tank attack is going in, and disorganization, even if only for half an hour, of the enemy's anti-tank defence may just enable that attack to be successful, when, without the confusion caused by low-flying aircraft, the attack might fail to break the initial crust of the defence.

The Employment of Bombers

Before discussing the various types of target which bombers may attack and the effect that they may be expected to have, I want to bring

to your notice a few points on their normal employment. In the first place, it must be clearly decided what effect the bombers are expected to achieve and having made that decision, sufficient force must be concentrated on achieving that result, bearing in mind the type of target to be attacked and the number of bomber squadrons available. Secondly, use must be made of mobility for concentration, which in the case of aircraft does not mean concentration on the ground but concentration over the target. In other words, aircraft placed at approximately equal intervals over a considerable area of country can be concentrated by a carefully thought out programme in large numbers over a comparatively small target. Thirdly, remember that aircraft are not committed by concentration because they can be at very short notice switched on to other targets within their range. If I may illustrate this from a land analogy, I would say that in the days when the bulk of the infantry marched and the bulk of the guns were horse-drawn it was necessary to concentrate thickly on the ground immediately behind the sector to be attacked. With the coming of greater mobility given by armoured forces and mechanization it is now possible to concentrate more dispersed on the ground and further back from the ultimate objective, and, owing to this fact, the actual sector to be attacked can within certain limits be altered owing to the ability of a force so concentrated to strike either forward or to its right or to its left.

The concentration of aircraft is merely an extension of this fact in that they can be concentrated even when greatly dispersed over a wide field, and then can strike at any given point within their range; and further, having returned to their starting point after completion of their work, they can be switched quickly on to another area of concentration. This is an attribute which land forces do not possess; once they are committed to an attack it takes a considerable time for them to be extricated and used elsewhere. Finally, the range of aircraft should be used for deep penetration; by which I mean always look to the furthest point that your bombers can reach and see whether decisive targets present themselves at extreme range. Very often it has been found (and there were numerous examples of this in the War) that commanders do not throw either their reconnaissance or their bombers nearly deep enough owing to their being too pre-occupied with the battle on their immediate front.

Now, what are the type of targets which may be expected to be attacked by bomber aircraft working in conjunction with land forces? There are, of course, the fighting troops. It is unlikely that good targets will be presented by a well trained enemy in his forward areas; both dispersion and concealment are normally well practised, and bombers should not find good targets in this area; yet two examples may be

quoted to show that there are cases where such bombing might well be justified. For instance, if the headquarters of an enemy force can be discovered, it would certainly be of great advantage to obliterate it immediately before an attack on the sector which it commands. Again, it would undoubtedly be of great value to carry out bombing in those areas where troops are in reserve or resting; nothing is more annoying and ultimately more shattering to the morale of troops who believe that at last they have come back into an area of comparative safety than for them to find that they are being constantly harassed by bombers or kept awake at night by bombers flying overhead, followed by loud explosions at intervals. Other targets in forward areas will be fleeting opportunity targets, and difficult to attack effectively.

The most normal object for bombers' attacks will be the enemy's communications generally; that is to say, attacks on road and rail movement with the idea of dislocating his supply system and at the same time preventing the orderly movement of reserves of all kinds. It is probable that any enemy in a major war will depend considerably on rail movement in addition to road movement, and it is likely that the most decisive effect will be obtained by the heavy bombing of railways at the opening of a campaign, as this would throw a considerable strain on to the road movement. When this has been achieved the attacks should be switched on to the roads which by then should present good targets with massed transport movement. Moreover, in these areas where road and rail movement is being attacked it is highly likely that there will be dumps, both of ammunition and of other supplies, which can usefully be attacked; in addition there will be reserves coming up by road or by rail and their movement may also be dislocated. Of all the objects that are likely to present themselves for aircraft attack it is probable that this road and rail movement will provide the best targets, and a really good intelligence system will build up a picture of the enemy's supply services and his channels of movement, and thus enable a commander to dislocate that movement at a critical time.

I should like to emphasize most strongly that all these forms of attack are best carried out in conjunction with definite land operations, which will throw a strain on to the enemy's system. For instance, it is probably of comparatively little value to destroy an enemy's headquarters when no immediate operation is intended because there will be time to replace both the personnel and signal communications, whereas, if the attack were carried out immediately before an operation it would cause serious dislocation. Similarly, the greater the land operation and the more the strain thrown on the enemy's communication system for bringing up ammunition, reserves and so on, the greater will be the effect if bomber

attacks are made when the greatest congestion is occurring. Sporadic bombing on communications is probably largely a waste of time unless it is done with the intention of throwing a very great strain on the enemy's system at a time when he wants to use it to its maximum capacity.

It is almost certain that some bombers will have to be diverted on to enemy aerodromes in order to keep down the scale of enemy opposition. The so-called Independent Air Force which operated in the South of France, in 1918, against German industrial objectives on the Rhine actually was forced to put about one-third of its effort on to enemy aerodromes, and about two-thirds on the more important objectives, and this will probably occur in the long run in any major war, and therefore a commander should remember that in calculating the scale of attack that is available on enemy objectives he may well have to discount about one-third of his strength on to enemy aerodromes, which do not perhaps actively further his object although in the long run they keep down the scale of attack against his own rearward services.

PROTECTION

With regard to Protection, I think perhaps I have said enough to show that it is the action of all types of aircraft in their primary roles which will, in the long run, give protection to our own side; that is to say, the action of the fighters in shooting down enemy aircraft, the action of the bombers in forcing the enemy to defend vital centres, and what might be described as the general offensive air warfare which will go on throughout a campaign will, it is hoped, give a measure of protection to our own side by the attainment of what is generally called "air superiority." This is not an aim or object in itself but it is the result achieved by the good fighting qualities and high morale of all pilots in carrying out their tasks.

SUPPLY AND MOVEMENTS OF TROOPS BY AIR

Now a few words on bomber-transport aircraft: these are extremely useful for the conveyance of small parties of armed men or fairly bulky loads of supplies of all kinds; but they are singularly vulnerable to attack by enemy aircraft, and it is unlikely that they will be able to be used usefully in a major war when the air may be expected to be fairly full of high-class high-speed fighters. Nevertheless they are very useful in wars of the Frontier type where opposition in the air is negligible and a certain amount of use can be made of them in their transport role. It is therefore necessary, I think, to utter a warning, when one hears the question of the supply by aircraft of mechanized forces acting independently, that the conditions must be such that the bomber-transport aircraft can fly with a reasonable degree of safety from air attack. Apart from that, on a very small scale, bombers and Army Co-operation aircraft can

convey personnel or can drop supplies either by parachute or direct ; but again, such aircraft would be very vulnerable to air attack until they had got rid of their loads, and the size of the force that they could supply would of necessity be very small indeed unless an enormous number of aircraft were taken off their primary roles and used for this purpose.

COMMUNICATION

It is the intention to provide at the Headquarters of the Army in the field a certain number of communication aircraft. These may be sub-allotted to lower formations as and when required. They will be of the light aircraft class fitted with cabin accommodation and designed to operate from reasonably small landing grounds. They will be able to convey staff officers in a degree of comfort comparable at least with a staff car for visits to the various headquarters of formations, and will be suitably fitted with facilities for the study of maps and writing while in the air.

These aircraft will not be designed to protect themselves from attack by service aircraft and therefore their use will be limited to those areas where the risk of attack by enemy fighters is not great. The degree of air superiority obtained will, therefore, have a considerable bearing on their utility. By flying low and on short journeys only, such as from Divisional Headquarters to the rear, they should enjoy a reasonable degree of security ; but they are not in any way intended for staff officers to do reconaissances over or even up to the front line.

CONCLUSION

It will be realized, I hope, from this lecture that the requirements of the Army from the Air Force may be both numerous and varied ; but as there is a limit to this, or any country's air resources, and there will be many other calls on the Air Force in a major war, it will be a matter of extreme importance to decide accurately what proportion of all types of aircraft may be rightly allotted to the direct support of the Army in the field. It is necessary also to guard against multiplication of types by insisting too strongly that the aircraft required for that purpose are different from those used for other operations of war ; it may sometimes appear that the types provided to support the Army are not always ideal, but it must be remembered that practically every Service aircraft built is a matter of many compromises between speed, armament, weight-carrying capacity, etc.

In conclusion, I can only say that I am certain that any country which sends its army to fight will ensure that, having in view all the circumstances of the probable war in which it will be engaged, a force of sufficient aircraft to give it all reasonable assistance will be placed under the command of the G.O.C.-in-C.

DISCUSSION

CAPTAIN G. G. GREEN : The Lecturer said that a very good moment to attack hostile aeroplanes was when they were leaving or returning to their aerodrome—that sounds most attractive in theory, but will it be possible for our attacking aircraft to arrive over the enemy aerodrome just as his aircraft are leaving or returning ; it seems to me that it will be quite out of the question for them to cruise over the enemy aerodrome at a great height until the enemy aircraft are seen leaving or returning.

CAPTAIN E. ALTHAM, R.N. : I should like to put two questions ; first, is the auto-gyro now regarded as a standard type for communications—more particularly for staff communications ?

My other question relates to training and personnel—an aspect of this subject that the lecturer has not touched on very much. Air co-operation with the Army in the Great War was facilitated by the fact that a very large percentage of the personnel of what was first the Royal Flying Corps and then the Royal Air Force had graduated through the Army ; pilots who were or had been soldiers knew what military formations look like on the ground, what the soldiers' methods were, and what they were aiming at. To-day an entirely new type of personnel is, naturally, being recruited for the Royal Air Force and it does seem to me that there is a danger of a certain lack of co-operation between the two Services unless that can be remedied by systematic training during which not only the soldier will be given experience in the air, but also the Royal Air Force, especially that section which is going to co-operate with the Army, study military formations, movements, tactics, etc., at close quarters.

MAJOR F. S. MORGAN : The Lecturer, in mentioning a preference for bringing down enemy aircraft over the enemy's lines, seems to me to omit one factor, and that is the moral effect on our own ground troops. It was always nice to read of so many aircraft having been brought down fifty miles the other side of the line, but it was much more satisfactory to see them come down on our own side.

LIEUT.-COLONEL A. G. ARMSTRONG : In the Great War it was not considered quite the thing, I understand, to shoot an enemy pilot when he was coming down in his parachute. Now, of course, we have totalitarian ideas of warfare. Is it still in the ethics or not in the ethics to shoot fellows when they are coming down in their parachutes ?

BRIGADIER-GENERAL W. F. SWINY : No mention has been made of anti-aircraft balloons. To whom do they belong—the Air Force, the Army or the Navy ?

CAPTAIN C. E. B. CATT : May I ask the lecturer whether he thinks it possible that the air battalions, with which I believe the Russians are experimenting, can get down in any formation, and whether they will be able to do any damage when they do get down ? I should also like to know whether the Russians have used parachutes to land light artillery, light tanks, or anything other than men ?

BRIGADIER H. E. R. R. BRAINE : The Lecturer made no mention of air co-operation in the wars now in progress in China and Spain. We know, however, that, from lack of artillery, much use has been made in Spain of aircraft to support attacking infantry. In his picture of a modern battle he, and presumably the Royal Air Force, seem to prefer to concentrate aircraft solely on the destruction of localities far in rear of the fighting area, rather than in destroying the fighting man and his weapons holding up the attack. As a soldier I would prefer that, during the decisive period of a battle, the momentum of the infantry attack should be maintained by the destruction of the front line fighter by aircraft, after the

attacking infantry has outrun the support of its artillery, than in the destruction of localities far in rear. It is, I think, a subject worthy of more serious consideration.

Another point—a very serious one—was the vague statement of the Lecturer that in any decisive land operations, combined action between the Army and the whole strength of the Air Force, would be decided by "someone." It is in the multiplicity of this "someone" and in the lack of a supreme Commander-in-Chief over both Services that the Army and the Air Force are going to get into the most dangerous situation and muddle in the next war.

THE LECTURER:

Replying to the questions in the order in which, I think, they were put :—

First—the difficulty of discovering the time when enemy aircraft are leaving and returning to aerodromes; I suggest that these aerodromes will be in a more or less definite area, and it is probable that there will be formations frequently leaving and returning there; in other words there will be fairly continuous traffic near the aerodromes. On the other hand, if there is not, or if you don't happen to get them at the right moment, you may pick up enemy aircraft en route, and, therefore, you get them slightly earlier or later than you would otherwise. You might, on occasions, have a blank day; but there are blank days in every sport! I quite agree that where there are very few aerodromes or very little traffic it might not be the best place.

The difficulty about the auto-gyro, or the Rota as it is more commonly called, was that although it had a very fine landing performance it had not got a very good take-off performance with a useful military load. With the ordinary military load its performance was very little, if any, superior to the modern light aircraft. They were fairly severely tested under service conditions and it was the general opinion that the modern light aircraft was more suitable. The Rota was also extremely draughty and very difficult to get into. Also, with their rotating wings, they were extremely conspicuous, and when flying over Salisbury Plain you could pick them up from miles away. I understand, however, that a new type of jumping Rota is being developed.

With regard to personnel: there is in the Army Co-operation Squadrons quite a considerable leaven of Army seconded officers who have done anything from four up to nine years service in the Army. They are, naturally, junior officers; but the training of all these officers, whether seconded Army or Air Force, is the same, and they go through the School of Army Co-operation. Reconnaissance really is the ability to see from the air what is on the ground; and the seconded Army officers really have no great advantage over the R.A.F. pilot. There seems to be a general idea that the Air Force officer sees a confused mass underneath him from which he is unable to report what is the enemy and what his own troops, whereas, for the Army officer everything is laid out tidily—forward troops here, then reserves, then guns, as in a sand model. I can assure you that that is not so. For anybody, looking from the air, what is below appears confused—troops going one way when you think they ought to be going the other, guns often apparently facing the wrong way, three tanks which you think are part of a big force but you cannot see the rest, and so on. What the pilot is taught to do is to report what he sees and the General staff and the Air liaison sections with squadrons are there to sift out these reports. He is taught enough at the School of Army Co-operation to have some idea of how an army works and he knows fairly well where to look, and if he can see anything

he reports it. I think you will find that, on the whole, reconnaissance by Army seconded officers and by Air Force officers shows that the best of both Services do equally well, while others of both Services are less successful.

The question of shooting down enemy aircraft behind their own lines in preference to over our own lines, for the benefit of our own troops, was certainly contentious in the late war and caused an occasional grouse. I should think a good place to shoot down a few is just behind their own front lines where everybody sees them !

With regard to the ethics of air warfare, if you are going to have a totalitarian war, then, I suggest you will shoot down pilots escaping by parachute. The destruction of aircraft is nothing compared with the destruction of a trained pilot as aircraft can be turned out much more quickly. The British attitude will be, probably, let the enemy do it first, and we'll do it if they do.

On the question of balloons—at the moment there is a School, under the R.A.F., on Salisbury Plain, and a few officers are still being trained in doing artillery reconnaissance from balloons, and a small personnel is trained to operate them. The point is that, in peace time, you don't want to lock up capital or personnel in balloons. A nucleus is kept going and could be expanded at the right moment.

So far as air parachute battalions are concerned, Russia was the protagonist of these, and Germany, I believe, is now rather to the fore. The Goering Regiment of parachute infantry landed at their new barracks by parachute, we are told. I think it is a matter of opinion, at the present moment, as to what use they may be. There is no doubt about it that if you sent a force with a sufficient supply of explosives, etc., they might do quite a lot of damage. On the other hand, what is the chance of them getting to their objective? So far, we have not taken them up in this country. Light tanks or guns cannot be dropped by parachute. They have to be landed after the infantry have dropped off and secured a landing ground.

There is no question that in Spain, Abyssinia and China, a great deal of use has been made of low-flying aircraft, to assist the infantry attack. In Abyssinia and China the aircraft have been preponderantly on one side and have had very little to fear from counter-attack, and that, I think, fulfils the conditions in which I have said that low-flying aircraft should be employed. In Spain, Franco has been very short of artillery, and where there is no heavy artillery bombardment it is very difficult for the infantry to advance. There is also no doubt that the Republican side was very badly supplied with anti-aircraft equipment of any kind, and discipline was certainly below what you would expect from a modern, trained army. Therefore, the degree of immunity from loss was high, and few aircraft were shot down ; moreover the Republican troops, unless they were well dug in, to a certain extent, suffered moral rather than material damage. It is reported too that lack of air reconnaissance caused situations which should not have occurred if aircraft had been properly employed. This question of low-flying attack is a very big one and it would require a complete lecture to deal with it properly.

With regard to the question "Army and Air Force, who decides ? " I said at the start, that it is laid down as the responsibility of the G.O.C. who has air forces under his command, to decide what he wants to achieve. He will, naturally, take the advice of his Air Force commander on the proposed plan, to ensure that from the air point of view it is within his resources, and that he is employing his air force in the best way to achieve his object. It is, however, ultimately for the commander of the Army to decide, and therefore, I think I may say that there is not a divided command as the command is vested, definitely, in the Army Commander.

BRIGADIER BRAINE : I think, perhaps, the Lecturer has misunderstood me. I did not mean the air force under the Army, I meant the whole independent Air Force, and the Army, both separate ; who is going to decide in that case ?

THE LECTURER : That is, definitely, a matter for the War Cabinet.

THE CHAIRMAN :

Group Captain Capel has dealt so admirably with the subject and subsequent questions that I do not think there is anything for me to add. Perhaps the last question raised by Brigadier Braine requires a little more explanation. He asked who was to be responsible for deciding what weight of bomber support was to be given to military operations over and above the original allocation of bomber squadrons to the field force. That decision would normally be the responsibility of the Chiefs of Staff Committee, but they would refer the matter to the War Cabinet if it involved the despatch of extra units overseas.

THE 3.7 IN. A.A. GUN AND ITS CONSTRUCTION

THE need for a mobile anti-aircraft gun better able to engage high-speed and high-flying aircraft than the anti-aircraft ordnance of Great War types has been realized for years; and since 1928 designs and experiments have been actively proceeding. But none was entirely satisfactory until Messrs. Vickers-Armstrongs produced the 3.7-in. A.A. gun now approved for large-scale manufacture.

There has been much criticism of the delay in the completion of fully equipped batteries of these weapons ; but it is seldom realized that the production of an entirely new type of gun is a highly scientific and necessarily lengthy process. The following description of the chief features of this new unit of the Army's anti-aircraft artillery and of the process of its construction will give some indication of what that production involves.[1]

The Gun

The gun fires a 28 lb. shell with a muzzle velocity which enables it to engage aircraft flying at a height of 40,000 feet. Loading is semi-automatic. A hand lever is provided to operate the breech when starting up, but subsequently the action of the gun in running out after firing opens the breech and compresses a spring, at the same time the empty cartridge case is ejected. The next round of fixed ammunition is placed by hand, into a loading tray lying parallel to the bore and just clear of the breech end of the gun. This tray is rotated by hand in line with the bore and the round is rammed home by a wire-operated ramming device. The rim of the cartridge case operates the ' catch retaining,' the compressed spring is released and closes the breech, but not completely until the loading tray has been returned to its original position.

The gun is now ready for firing. The striker is released by a firing lever, operated by a number (not the layer) on the right ; when the process is repeated as often as ordered.

The recoil system is on top of the gun and incorporates a compressed air system for running the gun out.

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[1] This article is mainly a summary of one published in *Machinery*, Vol. 53, No. 1370, and has been compiled by courtesy of that publication and by arrangement with the War Office.—Editor.

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The Carriage

The carriage travels on four pneumatic-tyred wheels, and is towed by a Scammell tractor at any speed up to 30 m.p.h. on level roads. It has also a good cross-country performance. To enable the gun to be brought quickly into action, arrangements are made for the carriage to be lowered on to the ground, and for removing one pair of wheels; the other pair is lifted clear of the ground, but remains attached to the carriage to act as counterpoise weights and give increased stability. Steadiness is ensured by the provision of four thrust girders, with levelling screws, radiating from the corners of the platform and secured to the ground by pickets. The mounting is finally levelled by means of its base-ring and a gimbal-bearing in the platform, to ensure accuracy of fire.

Laying and Fire Control

The approach of hostile aircraft is ascertained by means of an apparatus based on the principle of human hearing, namely, that when waves of sound are detected, the head is instinctively turned until they are of equal strength in either ear. The listener is then facing approximately in the direction of the origin of the sound. The army sound-locator has large movable trumpets, 4 feet 6 inches apart, instead of the 6 inches of the human ears, so that the direction can be gauged about ten times as accurately. There are, moreover, two pairs of trumpets each worked by one man, one for the horizontal plane and one for the vertical, and when the trumpets have been lined up and are being kept on the sound line, the third man of the team plays his part. His job is to calculate from the way in which the pairs of trumpets are conjointly moving, just where the airplane now is—for it must be remembered that sound waves take a full second to travel 1,100 feet, and the trumpets are of necessity only lined up to the point where the source of the waves that they are now receiving was located when the waves were emitted. Then instruction is given to the waiting searchlight, and on the accuracy of the calculation—though new mechanical devices are already in hand for reducing this human error to a minimum—depends whether the aeroplane will or will not be found at the end of the beam when the searchlight is switched on.

The anti-aircraft guns then come into operation, but since an aeroplane may travel about a mile from the time the shell leaves the gun until it reaches the necessary height, a good deal of intricate calculation must be done, literally in seconds. Here modern science once more plays a vital part. At the gun position there are three men working on a height-finder —which comprises a pair of wide-spaced mechanical eyes—and they can quickly give the height to a team of six on a Vickers Predictor. This is designed to eliminate human error as far as possible. The given height is set by one man turning a wheel, and practically all that the others have

to do is to turn other wheels to keep moving pointers in certain positions on other dials and the target in the view-field. The Predictor then calculates not only the bearing and elevation but the right fuze-setting to ensure that the shell will burst at the correct point, allowing for wind, the curve of the trajectory, and for the variation in barometric pressure in the upper air. The necessary data are transmitted automatically and continuously to dials on the gun mounting, and applied by the gun-layers by means of their elevating and traversing gears. The setting of the fuze, in accordance with the calculation of the Predictor, is effected by an automatic fuze-setter before the gun is loaded. The maximum rate of fire is approximately 15 rounds per minute.

CONSTRUCTION

The Royal Ordnance Factory, Nottingham

The Royal Ordnance Factory at Nottingham is one of several which are engaged in the manufacture of the new anti-aircraft guns. Although for obvious reasons, it is impossible to give figures relating to the size and output of the works, the fact that they are claimed in responsible quarters to be the largest under one span in this country, if not in Europe, will afford some indication of their magnitude.

It is entirely self-contained, with its own forge and foundry. More than 95 per cent. of the plant is new, and it is among the best equipped in the country.

The first machine tools were delivered in January, 1937, while the last machines were received only recently, and yet the factory is now working to capacity.

A remarkable feature in connection with the personnel of the factory is the relatively few workers who have had previous experience in gun production. The operators have, with few exceptions, learned their work since they found employment there. Not more than twelve members of the staff had been trained at Woolwich or at other gun factories, and on these devolved the responsibility of instructing the foremen and charge-hands who were later to teach the operators. Most of the employees have been absorbed from the local engineering industries, notably those of hosiery and lace-making machinery manufacture. They have thus had training in high-class work, and have readily adapted themselves to the needs of the heavier industry.

The production activities of the factory may be divided broadly into two parts. In the first place there is the manufacture of the actual gun components such as the loose liner, the barrel sleeve, the breech ring, the breech block, and the breech-operating mechanism. The second division covers the manufacture of the gun mountings. While the majority of the

actual gun parts are machined from forgings, in the mountings section castings and sheet metal form the bulk of the raw material requirements. On this account, the foundry adjoins the sections where the greater part of the work on gun mountings is performed, while the forge is conveniently adjacent to the sections of the machine shops where the heavier forgings are dealt with. In this way the transport of heavy material through the shops is reduced to a minimum.

The Gun Components

As already mentioned, the barrel of the 3.7-in. anti-aircraft gun comprises a loose liner which fits into the jacket. Three keys secure the liner to the jacket at the muzzle end, while at the breech end the jacket and liner are held together by screws. These engage half holes in the jacket and liner which register to form complete holes when the jacket is in position.

The liner is forged from nickel-chrome-molybdenum steel, the billet being about 2 feet in diameter and 6 feet long. The forging is done on one of a line of Duncan Stewart 1,500-ton and 1,200-ton steam-hydraulic presses. With these machines the working pressure is supplied by hydraulic power, while the head is raised after each working stroke by steam cylinders. The actual pressure exerted on the heated work is about 40 tons per square inch of surface engaged.

To bring the billet to the required temperature it is first of all placed in a long kiln and pre-heated to about 500 deg. C. The temperature of the billet is then allowed to drop 200 deg. C. before it is placed in one of a battery of furnaces, which in about five hours raises the temperature to approximately 1,100 deg. C. It should be noted that only the end of the billet to be forged is placed in the furnace, the opposite end, which is forged subsequently, being allowed to protrude. Usually, two heats at each end of the billet, followed in each case by forging, are sufficient to bring it to the shape and size desired.

The actual forging operations follow conventional practice. The unheated end of the billet is secured to a length of timber of approximately the same diameter by steel sections and clamps for ease of manipulation, and the work is turned as required when in position between the tools of the press by a chain which is operated from one of the overhead travelling cranes. As a rule, the stroke is set so that the upper tool is forced into the heated material to a depth of about 1 inch as the billet is turned and moved axially in the V-shaped lower tool, the stroke being re-set after each reduction of the diameter along the complete length being operated upon.

The top end of the billet is selected for the breech end of the liner, the carbon content at this end being slightly higher than at the opposite end.

The diameter at the breech end of the liner is greater than at the muzzle end, and the slight variation in the composition of the billet permits of partial compensation for this diameter difference and facilitates uniform heat-treatment.

After forging, and before rough-machining, the work is annealed. After annealing, the waste material is cut from the two ends of the forging, and centres are then drilled in the ends to allow the work to be turned on a lathe.

The rough-machining which is now done, is effected with a view to preparing the forging for heat-treatment, and consists of rough-boring and rough-turning.

Boring is done from both ends of the forging simultaneously. Shortly before the two boring bits meet in the centre of the forging, one of the boring heads is withdrawn leaving the other to complete the hole. It is interesting to note that the error between the two holes where they meet is usually within 0.10-inch.

Having completed the boring operation, the forging is turned in readiness for oil-hardening.

Before the turning cuts are taken, the bore is checked for alignment. If necessary, the work is straightened in Tangye hydraulically-operated presses.

Oil-Hardening Treatment

For use in the hardening of loose liners and jackets, a battery of special electrically-operated furnaces is installed. These furnaces are used in conjunction with quenching tanks, each of which is 35 feet deep. The heavy heating elements of the furnaces are arranged around the walls of refractory brick, and the heating of each furnace is controlled in five independent zones, one above the other, so that the heating effect along the forging can be varied from end to end, as desired.

The forging to be treated is lowered into the furnace from an overhead crane, and is located by a recess in the furnace base. To support the forging and keep it vertical in the furnace during the heating and soaking periods, three pins are passed through three holes provided in the furnace walls. The holes are spaced at 120° around the periphery, and about halfway down the furnace sides, and the pins are made to engage the forging while it is being supported by the crane. The furnace is capable of maintaining the work at a temperature of 1,200 deg. C. for long periods.

The oil-hardening treatment consists of first gradually warming the forging to 300 deg. C., and then heating it to 850 deg. C. during a period of about eight and a half hours in the electric furnace, soaking at this temperature for three hours, and quenching in oil. After about 45 minutes in the oil, the forging has cooled to 100 deg. C. It is then taken from the

quenching tank, and as quickly as possible charged into the tempering furnace, where, depending upon the analysis, it is reheated to between 600 and 650 deg. C. A soaking period of six hours at maximum heat is allowed, after which the forging is removed from the furnace and cooled in air.

At the completion of the sequence of heat-treatment operations, a disc of metal is cut from each end of the forging for purposes of test. From each disc two transverse tensile test-pieces are cut, together with two bend test-pieces, and a test-piece for the three impact tests which are made.

When the tests have been performed to the satisfaction of the inspectors responsible, the forging is returned to the machine shops. If, however, one of the tests fails, further heat-treatment is performed on the forging until the tests show that the material has the required properties.

Machining

Before any machining work is done on the forging after heat-treatment, it is tested for alignment, and if necessary straightened on one of the Tangye presses. The work is then turned on a Lang lathe, to remove about 0.4-in. per side, after which it is again tested for alignment.

Having turned the work and straightened it, if necessary, the diameters at the end and at the centre are turned preparatory to boring. This work is done on a Swift lathe, the bearing at the breech end being turned to 9.5 in. diameter, with a tolerance of −0.003-in., and that at the muzzle end to 8.8 in. diameter, the same tolerance being permitted.

The first of the boring operations now performed opens out the bore to 3.35 in. diameter. After this three further draw-boring operations are performed. The first of these operations increases the bore to 3.45 in. diameter. This is enlarged to 3.480 inches during the second cut, and to 3.495 inches during the third cut, these sizes representing the nominal diameters to which the cutters are set.

The next few operations are performed with a view to preparing the liner for the special operation of auto-frettage.

Having completed these, the bore is subjected to its first honing process, during which it is rough honed to a diameter of 3.50 inches. The diameter at this stage is not of very great importance, as further draw-boring and honing operations are performed later. Actually, this operation is performed more as a means of providing a good internal finish for inspecting for flaws and measuring for expansion, rather than from the point of view of accurate sizing.

Auto-Frettage

Since the War, gun manufacturers in various parts of the world have been experimenting with a view to eliminating the necessity for wrapping

gun barrels with wire, or using shrunk-on liners for purposes of reinforcement. If a thick-walled cylinder, the material of which is in an initially unstressed condition, is subjected to internal fluid pressure, the full strength of the walls cannot be utilized to resist the bursting stresses. When the load is applied, there is a marked stress gradient through the thickness of the wall, with the result that the inner fibres may be stretched beyond the elastic limit while the outer fibres remain virtually unstressed. Clearly, if the internal pressure is such that the elastic limit of the inner layers is likely to be exceeded, the problem cannot be solved by increasing the wall thickness beyond a given value, because, in theory at all events, the extra material thus added will contribute nothing to the bursting strength.

If, however, it can be so arranged that the internal surface layers are in a state of initial compression, then, obviously, a marked increase in strength can be achieved. Under such conditions, if a gradually increasing fluid pressure is applied to the bore, the initial effect will be merely to relieve the stresses present in the walls. Eventually, a point will be reached when the stresses cancel out exactly, and the full elastic strength of the material will then be still available to resist additional bursting pressure.

The object of shrinking sleeves on to a gun barrel, or winding on layers of wire under high tension, is to produce the desired initial stresses in the inner layers. By the so-called auto-frettage process, the same result is achieved with a one-piece barrel or tube. As applied to the anti-aircraft gun liner, the process consists briefly of mounting it on pistons which engage the 3.55-in. bores at each end, and applying hydraulic pressure through the bore of one of the piston rods. The pressures used may be upwards of 35 tons per square inch. Dial gauges record diameter increases due to internal pressure at various points along the liner.

The effect of the treatment is to stress the material beyond its elastic limit, after which the work is given a low-temperature heat-treatment in an electric furnace, the conditions being so arranged as to produce the desired residual stresses in the walls of the barrel. The outer layers, which fulfil the same function as the shrunk-on sleeves formerly used, are in tension, while the inner layers are in compression.

After the completion of the auto-frettage process, the liner is turned, and the surplus material parted-off from the two ends. The work is then subjected to further draw-boring operations, which enlarge the bore to 3.680 inches, ready for honing. Having finished the latter operation, which brings the bore to within 0.002-inch of final size, the liner is finish-turned ready for grinding, checks being taken for alignment along the bore, both before and after the turning processes.

The operation of rifling the bore of the loose liner is done on a Craven barrel-rifling machine, after which the rifled bore is honed to bring it to 0.002-inch below nominal size, and remove burrs thrown up during rifling.

THE ARMY'S NEW WEAPONS AND EQUIPMENT

By LIEUTENANT-COLONEL A. G. ARMSTRONG, *p.s.c.*,
Indian Regular Reserve of Officers

THE British Army has burnt its boats and has practically eliminated the horse, which has been replaced both in the fighting units and in the administrative services by the internal combustion engine. This fact was made abundantly clear at the demonstration of modern arms and equipment held on 22nd February, 1939, at Miles Hill, Aldershot, for the benefit of Members of both Houses of Parliament. On this occasion, spectators were privileged to witness the most ambitious display of mechanized arms and equipment yet staged in this country and to draw their own conclusions as to the probable course of future warfare in which the British Army might happen to be engaged.

The tendency seems to be for offensive operations in mechanized warfare to take the form of an advance in four waves :[1]

(*a*) The first wave will consist of cavalry armoured car regiments, whose role will be purely that of reconnaissance.

(*b*) The second wave will be formed by cavalry light tank regiments supported by special bodies of motorized infantry.

(*c*) The third wave will consist of infantry, mainly motorized off the battlefield but debussing near the zone of effective fire in order to enter the fight on foot. They will be closely supported by infantry tanks and by a powerful artillery.

(*d*) The fourth wave will include the light and " cruiser " tank battalions of the Royal Tank Corps. Their role will be to exploit the success gained by the third wave of infantry, to break through the enemy's weak spots and to deliver a knock-out blow.

This broad conception of an advance in four waves is probably an over-simplification of the true picture, for it will be the exception rather than the rule that the ' waves ' will be separate and distinctive. In the majority of cases, the tendency will be for each to overlap or intermingle with those in front of or behind it, the whole thus combining to form, as it were, a synthesis of offensive action.

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[1] The views expressed in this article, it should be emphasized, are purely those of the author and are in no way official.—EDITOR.

THE BREN CARRIER

THE ANTI-TANK RIFLE

SOME OF THE ARMY'S NEW WEAPONS

THE 60 PDR. GUN

THE 6 IN. HOWITZER

SOME OF THE ARMY'S NEW WEAPONS

Cavalry Armoured Car and Light Tank Regiments

The function of cavalry armoured car regiments is purely that of reconnaissance, and they are not intended to become involved in heavy fighting—as opposed to patrol actions—if it can be avoided. Their duty will be to push rapidly to the front and seek contact with the enemy's advanced troops in order to discover their strength and direction of march. A squadron comprises squadron headquarters of three armoured cars and three troops each of three cars—total twelve cars. The regiment contains three such squadrons, and in addition has a number of motor-cycles, four-seater cars, trucks and lorries.

Acting on information received from the first wave of armoured car units and from the air, the role of the cavalry light tank formations forming the second wave will be to attack and drive back the enemy's advanced troops,[1] to secure important tactical features in the battle zone, and to cover the deployment of the infantry and artillery formations, comprising the third wave. On occasions, it is expected, cavalry light tank units will not be able to develop sufficient strength to penetrate the crust formed by the enemy's advanced troops and will require additional support. This will be provided by special bodies of infantry transported in trucks and forming an integral part of the troops comprising the second wave. These troops will dismount on entering the zone of fire and will advance in close co-operation with the cavalry light tanks. At present, the King's Royal Rifle Corps and the Rifle Brigade have been selected for and are receiving special training in this role. A squadron of cavalry light tanks consists of Headquarters with three light tanks and five troops each of three tanks, total eighteen light tanks. The regiment contains three squadrons.

Behind the screen formed by the troops of the second wave—the light armoured cars having drawn off to the flanks—the commander will conduct his personal reconnaissance and decide on his plan of action. Both he and his staff will probably be transported in light armoured cars or tanks so as to afford them some measure of safety against chance shell splinters or bursts of machine-gun fire. Having formed his plan, he will entrust the execution of it—in the early stages at any rate—to his infantry and artillery.

Infantry Organization and Equipment

An Army Corps includes both infantry battalions and machine-gun battalions equipped with Vickers guns; an infantry battalion consists of

[1] Our regular cavalry—with the exception of the 1st The Royal Dragoons and The Royal Scots Greys—are or soon will be completely mechanized and equipped with the new three-man light tanks.

Battalion Headquarters and four companies, each of three platoons. A platoon includes platoon headquarters and three sections, each of one "Bren" gun and eight soldiers.[1]

For close support within the battalion, 3-in. mortars are included in a platoon in the Headquarters Company. The 2-in. mortar forms part of the equipment of all rifle platoons. The 3-in. mortars are improved descendants of the Stokes mortar of the Great War, and they have proved their value in recent fighting in Spain.

Infantry are nowadays well equipped to resist an attack by tanks, for they possess, on a scale of one to each platoon, an anti-tank weapon firing a heavy A.P. bullet, known as the "Boys" anti-tank rifle. A special feature of an infantry battalion is the Carrier Platoon, formed of armoured carriers on tracks. These vehicles carry a crew of three and are provided with a "Bren" gun, intended primarily for use dismounted. The role of the carrier is to transport the weapon and crew safely across the zone of fire to the point where it is desired to come into action. In an emergency, however, the gun can be fired from the vehicle itself. The carrier is very low and inconspicuous, and when in movement bears a strong resemblance to a mechanical greyhound; the cross-country performance is excellent. The platoon comprises one Bren carrier for the Headquarters and three sections each of three carriers. The whole of the transport is motorized—not one animal being included in the strength of a battalion—so that if it is desired to embuss the infantry the transport will be able easily to keep up with the motor columns. The infantry truck is a four-wheeled 15-cwt. vehicle with oversize tyres and high road clearance; the transport capacity is seven soldiers in full fighting order, besides the driver; and the cross-country performance is reasonable. Each infantry platoon is equipped with a truck for the carriage of its anti-tank rifle, "Bren" gun, reserve ammunition, etc.

Besides the 15-cwt. truck, the Army authorities have developed the Norton motor-cycle and sidecar for military purposes. This outfit carries a crew of three men with a "Bren" gun and is a strong and reliable combination. The drive is on both rear wheels, which gives a high standard of cross-country performance. If required, the crew can dismount and man-handle the outfit over any reasonable obstacle. This type of machine which is much favoured by the German Army, is to form the basis of the equipment of the motor-cycle battalions of the Territorial Army. Owing to their lack of armoured protection, these vehicles are unsuitable for use in the zone of effective fire, but they would be invaluable for inter-communication purposes.

[1] The "Bren" gun was fully dealt with in the JOURNAL for February, 1936 (page 102, etc.).

The development of motorization and mechanization has necessitated a thorough overhaul of the soldier's service dress and equipment. The new type of battle-uniform consists of an overall made of khaki serge with large patch pockets; the trousers are of the same design as ski-ing trousers and are of full length, being secured round the ankle by a short canvas gaiter. Boots are of the ordinary "ammunition" pattern. This kit, which is strong and serviceable, will permit the soldier to scramble in and out of motor vehicles and to crawl to a firing position without undue handicap.

Artillery Equipment

Apart from tanks, the chief support for the infantry will continue to be provided by the guns and howitzers of the Royal Artillery. The 25-pdr. gun-howitzer, which is replacing both the 18-pdr. gun and the 4.5-in. howitzer, is a sturdy weapon with long range, wide split traverse and high rate of fire. The howitzer effect is produced through the use of a varying series of charges, numbered from one to three. The carriages are pneumatic and are suitable for mechanical traction; the 6-wheeled tractor, which draws the guns, is equipped with a winch to extricate the gun from difficult ground. The battery comprises Battery H.Q. and three troops, each of four guns. The Field Regiment comprises Regimental H.Q. and two batteries, giving a total of twenty-four guns. The 25-pdr. forms the bulk of the field artillery with a force and has a fine all-round performance.

With the abolition of the 4.5-in. howitzer, the 6-in. howitzer has become the lightest type of field howitzer[1] and is available in adequate numbers. The 6-in. howitzer is supported by the 8-in. howitzer—a truly formidable equipment firing a 200 lb. shell, and capable of speeds in excess of 20 m.p.h. on a flat road. Both these weapons are fitted with oversize pneumatic tyres and are towed by Scammell tractors, the chassis of which are composed of commercial parts. This tractor is much cheaper to produce than the medium "Dragons" originally adopted.

For counter-battery work, there are the 6-in. gun and the 60-pdr. gun both tractor drawn. 6-in. howitzers and 60-pdr. guns are the equipment of the Medium Regiments, R.A., and are intended to supplement the Field Regiments with their heavier weight of shell. A Medium Regiment, R.A., comprises Regimental H.Q. and two batteries, each of two troops of four guns, making a total of sixteen guns.

Formerly one of the principal targets of the field artillery was the hostile machine-gun, but with the development of tanks and anti-tank

[1] The 3.7-in. howitzer transported on pack for mountain warfare is not regarded as coming within the scope of this article

weapons, their tasks have had to be examined afresh. Tanks can, it is thought, be trusted to deal satisfactorily with enemy machine-guns, thus setting free the artillery to neutralize or destroy the enemy's anti-tank organization. In carrying out this task, full use will be made of smoke shells, which have been brought to a considerable pitch of perfection. Smoke fired from guns or from projectors fitted on tanks will form one of the strongest allies of the tank in its struggle with the enemy's anti-tank weapons. In suitable circumstances, smoke bombs dropped by Army Co-operation machines, R.A.F., may prove of considerable value.

Anti-Tank and Anti-Aircraft Defence

As a defence against tanks, the troops are equipped—in addition to the anti-tank rifle—with a 2-pdr. anti-tank gun. This gun, which has an all-round traverse, is a very accurate weapon with a high rate of fire. Normally the gun fires from its central mounting, but in an emergency it can be fired from its wheels. It is drawn by a light "Dragon" or by a 15-cwt. truck. One direct hit from this gun will knock out any known tank that has yet been designed for field service. Formerly, the 2-pdrs. were infantry equipment, but lately they have been handed over to the artillery, who have organized them as Anti-Tank Regiments, R.A. Each regiment comprises Regimental H.Q. and four batteries, each of three troops, giving a total of forty-eight guns in the unit.

Other forms of anti-tank defence are land mines and "Dannert" "concertina" wire. The latter, which is made of tough, barbed steel winds itself round the tracks and chassis of a tank, and so entangles the vehicle that it is soon brought to a complete standstill.

Anti-aircraft defences in the Army have been highly developed, and are likely to inflict heavy casualties on air-pilots who may imagine that lessons drawn from the fighting in Spain are equally applicable elsewhere. The various types of equipment include "Bren" guns on A.A. mountings; 2-pdr. "Bofors" A.A. guns; 3-in. A.A. guns; and 3.7-in. A.A. guns. The 4.5-in. gun is for use on fixed mountings and is not a field weapon. The "Bofors," which is a Swedish model, is highly mobile and accurate. It is intended chiefly for use against low flying attacks from the air. The 3-in. and 3.7-in. are designed to deal with aircraft flying at a higher ceiling. The 3-in. has a quicker rate of fire but less range than the 3.7-in., which is a fine weapon, with a ceiling of 40,000 feet. The two calibres are, however, complementary and have their strong and weak points.

Armoured Formations.[1]

Last, but not least, we come to the fourth wave, consisting of units of he Royal Tank Corps, and, of course, including cavalry light tank

[1] This article was written before the formation of the Royal Armoured Car was announced.

formations. Armoured Divisions are a new development in our Army, although abroad—notably in Germany—they have existed for some time. It has been officially stated that the British Field Force is to include three such Divisions—two Regular and one Territorial. These are to be organized in divisions of two brigades each, comprising light and "cruiser" tanks. The "cruiser" tanks will support the light tanks, which may be compared to destroyers at sea. "Cruiser" tanks, however, will form the main offensive strength of an Armoured Division. The development of the cruiser type of tank foreshadows the appearance of "Battleship" tanks, which will represent on land the capital ships of warfare at sea. These will be large and powerful machines, equipped with several gun turrets and machine-guns of various calibres. Their armoured protection will be such as to afford complete security against all but the largest types of anti-tank weapons. They will, of course, be available only in limited numbers and will be used in combination with light and cruiser tanks to deliver a knock-out blow against the enemy's infantry or to crush an enemy armoured formation.

Support tanks are special vehicles equipped for the close support by fire and/or smoke shells of other formations of tanks.

The time for the intervention of the armoured formations will come when the infantry and artillery—possibly after several days of hard fighting—have created the conditions necessary for success. Above all, it will be necessary for the other arms to neutralize or destroy the bulk of the enemy's anti-tank organizations before the decisive blow is launched by the tanks. When the Commander-in-Chief has decided that the situation is ripe, he will direct the tanks in overwhelming strength against the point or points that seem to offer the greatest chances of success.

The enemy, however, whose mind may be expected to work on similar lines, will probably arrange to concentrate the bulk of his own armoured formations to meet the threat of our decisive tank attack. Hence the climax of the battle is likely to consist of a desperate encounter between the opposing forces of armoured divisions. Upon the result of this action, the whole fate of the battle will depend. Once the enemy's armoured troops are driven from the field, the defeat of his infantry is assured and the battle may be considered as won.

The pursuit will be taken up by those armoured troops that have been re-formed and re-organized after the tank versus tank action, and by Army Co-operation squadrons of the Royal Air Force, supported by machines from the central reserve of air power. Victory can therefore be assured only by the co-operation of all the new weapons and equipment acting in conjunction with the older arms—the infantry and artillery, whose hard task will be to create the conditions necessary for the success of the armoured formations.

DRILL AND DISCIPLINE[1]

By Major-General J. H. Beith, C.B.E., M.C.
Director of Public Relations, the War Office.

AN Army in action is a machine, and if a single cog gets out of place the machine suffers. If too many cogs get out of place, the whole machine may begin to miss and falter, and perhaps break down altogether. Therefore it is of vital importance that our army machine, upon which the safety of our soil largely depends, shall be assembled and maintained with infinite care, and be composed of sound and fully tested material. Brains and experience design and assemble that machine, but it is discipline which holds it together; and if the discipline be sufficiently thorough, no exposure or rough usage is going to put the machine entirely out of action.

But first let us be quite clear in our minds about the word discipline, because in military parlance it has two meanings: First, the degree of compulsion required to control a soldier's behaviour in his daily life; and, second, the measures required to school that soldier into a perfect fighting unit. Discipline of the first kind is of course as important as ever. Smartness off and on parade; saluting and general turnout; these are still vital to the credit and good name of the Regiment; but with the spread of modern education, and the increase in intelligence of the British soldier, they are perhaps easier of inculcation than formerly. But the need of discipline of the second kind is greater and more urgent than ever before in our history, for the following reasons.

The essential tactics of warfare do not change. They consist in the main of shock-action, whether the shock be administered by an infantry attack or a cavalry charge or an advance of tanks; supplemented by missile action, whether the missiles be discharged from a cross-bow, a Lee-Enfield rifle, or low-flying aeroplane.

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[1] This article has been written as the Foreword to a new Manual of Drill, which is in course of preparation. (See "Army Notes", p. 432).

Other articles on the subject appeared in the Journal for August, 1934, page 464, and November, 1934, page 714, under the titles "Modern Infantry Discipline" by "A Field Officer" and "A Defence of Close Order Drill," by Major (now Lieut.-Colonel) M. K. Wardle, D.S.O., M.C., respectively.

Before the days of intensive artillery and rifle fire, men fought in close order. This made battle discipline a simpler matter than to-day, for an officer was able to keep his men under personal control; and the men themselves, when they went into action, enjoyed the feeling of mutual moral support which comes from physical contact with a comrade on either side—a situation in which it is much easier to be valorous than in the comparative isolation and loneliness of an advance in open order. That is why battle discipline to-day is going to be more difficult of achievement than ever before, because troops in future are going to live in what may be called perpetual open order. No close ranks, no attacks in mass, nothing but wide deployment with small, detached, highly mobile units taking their own line and employing their own initiative. Direct control of these will in many cases be impracticable, which means that each sub-unit, however small, must be so thoroughly trained as to be able to discipline itself—in many cases himself! Sub-units isolated from their comrades must learn to press on and not wait for orders; the unsupervised despatch-rider or truck driver, confronted with a barrage, must learn to resist all temptation to halt or take cover. Such virtues can only be acquired by perpetual discipline of body and mind.

There is no substitute for discipline—least of all blind, unregulated courage. This being so, how is discipline to be achieved and maintained under modern conditions of stress and strain? The first and obvious reply is that such discipline can be maintained by very thorough instruction in the use of all of our new weapons of offence and defence, and assiduous practice in the new formations and tactics which their use entails. Plainly, the more familiar a soldier can make himself with what may be called the technical routine of war during training and manoeuvres, the more efficiently he will comport himself when submitted to the test of actual battle.

Agreed; but this is not enough, nor half enough. The trouble about all manœuvres, however arduous and testing, is that they are conducted under peace conditions. There is no actual danger in them, and therefore they can never inculcate the one quality which really matters, steadiness and initiative under fire, especially such fire as a soldier is liable to encounter to-day. That quality does not necessarily go with proficiency in the use of ground or skill in the handling of weapons. It is a quality which stands apart by itself, and must be acquired (if it is not inborn and it seldom is) by a special process of training.

The Elements of Discipline

There is no secret about the method of that training: it is simplicity itself, and at first sight appears to bear little relation to the complicated

tactics of modern battle action. It consists merely in methodical and whole-hearted performance of the routine drill of the barrack square, varied by physical and musketry exercises. This training should be long and thorough, and should extend to comparatively trifling details, because beneath its flat and perhaps unpromising surface lie the roots of soldiering, which are these :—

(*a*) The soldier's pride in his own personal smartness and efficiency, and in the unit to which he belongs. Many a time in the history of our Army pride of Regiment alone has steadied men in a tight corner.

(*b*) Instinctive ability both to obey and to command. The soldier is always doing one or other of these, and intensive drill is the best method of accustoming a commander to impress his will upon those under him, and them to obey instinctively and smartly.

(*c*) Adaptability. A soldier must instantly be ready to take orders from his commander of the moment, *however frequently the hazards of battle may transfer that command*; and be equally ready to take command himself should occasion arise.

(*d*) The sense of Order and Discipline. This enables troops to be assembled and manœuvred rapidly and without confusion at moments of emergency.

(*e*) Resiliency, or quick power of recovery, which restores the morale of disorganised troops in the shortest possible time.

(*f*) Physical and mental endurance, which enable a soldier, however desperate the situation, or however exhausted he may be, to carry on far beyond the limits of his normal strength and courage.

In fact :—

"If you can force your heart and nerve and sinew
To serve your turn long after they are gone ;
And so hold on when there is nothing in you,
Except the will that says to you, ' Hold On ! ' "

Such are the qualities of the true soldier ; and experience has proved that they are best and most lastingly ingrained by simple routine exercises in the elements of soldiering, continually and patiently repeated. So trained, a soldier will be able, whatever the danger and distractions about him, to concentrate steadily on his duty, whether it is to lead, or follow, or act upon his own initiative. Then it is that he will appreciate the value of his early and, at times, perhaps ruthless training, for it will have made him a keen, flexible and fully tempered instrument. In most

of the countries of Europe where universal military service is an acknowledged obligation of citizenship, the rising generation is submitted to physical and mental discipline from its earliest youth. Consequently, when a young man enters upon his period of military training, he is already in essence a soldier: and yet he is invariably submitted to at least three months of the drill-discipline just described. How much greater, then, is the need in this country of ours, which imposes no form of such discipline upon our youth at all, for grounding young soldiers in these, the elements of their calling—elements which, though simple in themselves, produced the British soldiers who formed those stubborn squares at Waterloo, and kept the long, tenuous, sorely-pressed line intact at First Ypres.

INFANTRY RECONNAISSANCE DRILL

By Major C. R. A. Swynnerton, *p.s.c.*,
The North Staffordshire Regiment (The Prince of Wales's).

"TIME spent in reconnaissance is seldom wasted." So ran a sentence in a former edition of Field Service Regulations, Volume II. The latest edition of this manual does not repeat these words literally, but nevertheless devotes considerable space to the importance of reconnaissance and to the time factor. In peace exercises, commanders have always to reconcile the opposing claims of a full reconnaissance with the necessity for completing that reconnaissance against time. In many cases, particularly in higher training, the time factor prevents company commanders from carrying out an adequate reconnaissance, and platoon and junior commanders frequently move off to take part in an exercise without having seen the ground over which they are to operate or at least with only a fleeting glimpse of it. It may be safely concluded that if such a state of affairs is hardly ideal in peace, it will be decidedly obnoxious in war. What form the next major war will take we do not know, neither can we now say that our present-day tactics will suit it. In 1914 our tactics and tactical formations were faulty, as were those of our allies and of our enemies. The hard and costly experiences of that war produced the tactics and tactical formations in which we train our army to-day. No major wars have taken place during the last twenty years, unlike the twenty years which preceded 1914, and while valuable lessons may be drawn from the fighting in Spain and to a lesser extent in China, we must be prepared to change our battle tactics and formations considerably if another great war overtakes us. What we do know, however, is that the time factor in the next war, major or minor, will be quite as urgent as in any war that has occurred on this earth since warfare first began. And in the next war, if it goes according to our present ideas, adequate reconnaissance down to platoon and section commanders will be more imperative than in the past, for junior leaders will be required to display considerably more individual initiative and to assume far more responsibility.

Strangely enough, now that the Army has been given increased mobility by being organised on a mechanised basis, reconnaissance by infantry battalion and company commanders is a much slower business

than it was before. When these officers were mounted on horses they could reconnoitre for their tasks fairly quickly, but now, under most conditions of ground, they have to plod round on their feet because, except in unusually favourable country such as, perhaps, Salisbury Plain and parts of Surrey, wheels are practically useless. These remarks apply with decreasing force to senior officers of the rank of Brigade Commander upwards for, whatever the operation, their reconnaissance is not ordinarily one of such topographical detail as that of the battalion officer. Indeed it may be said that the motor-car does in some situations, and particularly in defence, speed up the higher commanders' reconnaissance and this fact therefore cancels some of the delay which mechanisation imposes on the unit officers.

The pace at which peace exercises are conducted seldom resembles their speed in war, and it is interesting to take examples from the early days of the Great War in France or from other theatres where the available artillery was in much the same proportion to the infantry as it is to-day, and work out the timings as for a peace exercise, for operations where a battalion took all of twenty-four hours to perform its task. Possibly two hours or even less would be reckoned as ample, and if the details of the fire plan were sound, the attack would probably be allowed to succeed. The series of disconnected fights that go to make up the first battle of the Aisne are particularly good material for anyone who cares to work out such timings; and if the exception proves the rule, we are lucky in this particular battle for we have General Hunter-Weston's attack at Venizel carried out without reconnaissance, with a minimum of orders, with no artillery support and in pitch darkness. In spite of all that it was the only really successful attack in this battle, and one is at liberty to wonder whether such an attack carried out as a peace exercise would not be adjudged a failure! However, arguments as to the relative speeds of operations in peace and war, once the starting line has been crossed or defences put into a fit state to repel an attack, only affect the present argument to this extent, that the quicker we can stage an operation in mobile warfare, the more chance do we give ourselves, whether in attack or defence, of bringing that operation to a successful conclusion. But while it is true to say that time spent in reconnaissance is seldom wasted, it is equally true to say that reliance on this phrase can be extremely dangerous if all commanders, say from the Divisional Commander downwards to the section commanders, are to indulge, one after the other, in a complete examination of the country affecting each. It is obvious that a very great deal of the time spent in reconnaissance will have been wasted where such reconnaissances are thus carried out consecutively. Where, however, some "drill" exists whereby as many reconnaissances as possible can be carried out *concurrently*, the fullest

possible use will be made of the time available and the operation will start with increased odds in favour of its success.

The Example of the Royal Artillery

This is realised in battalions and most of them have a written "drill" as to what should happen when a reconnaissance is afoot. The Royal Artillery, being one Regiment, have evolved a standard drill for all their field regiments, which is the same wherever the unit is stationed or whoever happens to be its commander. In the infantry this is not so. Each battalion commander evolves his own drill which differs in detail and often in important respects from the drill of the next unit. Furthermore, each successive Commanding Officer alters the drill of his battalion to suit his own ideas. This may well accord with the principle of allowing each battalion commander liberty of action in a domestic matter, but is the speed at which his battalion gets into action really a domestic matter only? It is not, and neither is it the particular affair of the Brigade or Divisional Commander, for were it so the unit drill might continue to vary each time a battalion changed its station. As pointed out above, it has not been considered a domestic affair of the field regimental commander in the Royal Artillery and it is urged that it should cease to be one in the infantry, just as the correct sequence of giving out orders or of the movements in "sloping arms" is not a domestic affair of anybody.

In the infantry, all unit drills, in addition to being different, must change with each stage in the process of rearmament. A battalion that arrives in England this trooping season after a prolonged period of service abroad, where it has not been armed with all the new weapons or equipped with mechanised transport, will require at least one full training season to produce a satisfactory drill, and if that unit happens to be sent to an outlying station where training facilities are meagre it will take considerably more than one training year to perfect it and ensure that everybody is trained in it. Since, as stated above, two battalions will seldom be found to have the same drill, the following suggestions will probably meet with every battalion commander's criticism over some detail or another. That will not mean, of itself, that these suggestions are valueless; on the contrary, it will go a long way towards proving the necessity for a common doctrine in this matter of reconnaissance drill, for if every battalion's drill is different, it is unlikely that all are beyond improvement. Incidentally, it is not claimed that what follows is itself so perfect that it cannot be improved upon!

Let us take the attack first and begin by putting ourselves in the Brigadier's position. He either gets orders from his Divisional Com-

mander or makes up his own mind that he has to attack the enemy holding the line "A—B—C." He can tell pretty well from his map, before going out on his reconnaissance, that he will require one, two, or even all three battalions in the actual attack. Let us assume he thinks that two will be required and that the dividing line between their objectives will pass through "B." He gives his Brigade Major certain preliminary orders, collects his gunner, machine gunner, Brigade Intelligence Officer and anyone else he considers essential and takes them off. Acting on his orders, the Brigade Major gets hold of the Commanding Officers (who arrive with their Intelligence Officers), explains the situation to them, tells them that the "Loamshires" will attack "A—B" and the "Corksex," "B—C" and that they themselves are to meet the Brigadier at a certain place at a certain time. For the sake of argument we will say that there are thirty minutes to go before the Commanding Officers are to meet the Brigadier.

Details of Procedure

Now the Commanding Officer will have brought, in addition to his Intelligence Officer, one despatch rider mounted on a motor-bicycle. The best thing the two officers can do to occupy themselves during this thirty minutes therefore is not to wait about or "coffee-house" with the Brigade Major, but to get out somewhere and have a look at the ground over which they will have to attack. Even if they can spend only five minutes at this, they will listen to the Brigadier's orders with a great deal more understanding than if they have to start from scratch. But before going off on this preliminary reconnaissance the Commanding Officer will send his despatch rider back with the following information and orders :—

(*a*) The battalion is going to attack.

(*b*) Commanding Officer's party will meet Commanding Officer at a given place at a given time. (Ten minutes after the C.O. is timed to meet the Brigadier.)

It will be seen that the foregoing in no way commits anybody except the small Commanding Officer's party, so that if, as a result of his reconnaissance the Brigadier has changed his mind in essentials, nobody is one whit the worse. The Commanding Officer's party might consist of:—Signal Officer mounted on an 8-cwt. truck ; Carrier Platoon Commander mounted on a carrier ; Intelligence Sergeant mounted on a motor-cycle ; Intelligence Private mounted on a motor-cycle. As "boards, map, commander's" are an issue, it will save a great deal of time if the Brigade Intelligence Officer, who has accompanied the Brigadier on his reconnaissance, comes to the conference with such details as starting-lines, inter-unit boundaries, objectives, artillery tasks, etc., all marked in china-

graph pencil on his map. Before the orders begin he could mark every Commanding Officer's map the same as his own and thus avoid the otherwise inevitable rigmarole of co-ordinates which occupies so much time.

The Brigadier has now completed his orders and "Zero" is in one hour's time. It is now the Commanding Officer's task to complete his reconnaissance, already partly and sometimes almost wholly done. Before going off, however, he considers that he will probably need three companies, "A," "B" and "D" forward with "C" in reserve; he decides where he wants his battalion brought and what he wants done about the transport, off-loading of L.M.G's, ammunition, etc. He then goes off to his Commanding Officer's party who should by this time be close at hand and puts them, and particularly the Intelligence Sergeant, "into the picture." He marks the Intelligence Sergeant's map with assembly area, start line, and tentative company objectives, tells the Sergeant what he wants done with the transport, etc., and where and when company commanders are to meet him. The C.O. then goes off with his party on a fuller reconnaissance and the Sergeant goes back to the battalion and transmits the C.O's orders to the second-in-command who should, on receipt of the initial message from the C.O., have sent for all company commanders, who in turn should have arrived at the head of the column with their runners before the Intelligence Sergeant returns. The company commanders therefore get all the information from the Sergeant at the same time as the second-in-command and they should at once go off independently to have a look at their probable frontages of attack while the C.O. is still completing his reconnaissance. They, like the C.O. earlier on, will therefore be in a much better position to appreciate their orders if they have seen the ground beforehand; and again, if the C.O. has changed his mind and only wants to attack with "A" and "B" companies forward, no harm will have been done. If, as will often be the case, the C.O. has not changed his mind very much, it may well be unnecessary for the company commanders to go back for a fuller reconnaissance. This will allow more time before zero for platoon and section commanders to have an opportunity of looking at the ground.

Meanwhile the battalion will have arrived at its assembly area and the second-in-command can spend his time profitably in imparting his information to company seconds-in-command, etc., until runners arrive from the company commanders to guide the companies to their own assembly areas and platoon commanders to the company commander. It will rarely be possible for platoon commanders, owing to their lack of mobility, to carry out a reconnaissance simultaneously with their company commanders, but where such an opportunity is offered, the company commanders should recognize it and seize it. The crux of the whole

procedure described above is that all junior commanders must be at their appointed rendezvous with their next senior commander punctually at the time appointed. It would also be an advantage if junior commanders, when carrying out their first reconnaissance, would overlap the boundaries tentatively given them, for a detail like a boundary may well be shifted a hundred yards or so one way or the other at the final conference. One criticism that may be levelled at the foregoing is that there will be so many people moving about that the enemy will get wind of the projected attack. The answer to that is that if the attack is to succeed at all, all these people will have to move about on their reconnaissance tasks sooner or later and if they do so carefully (as they will do in war !) there is little danger of their "blowing the gaff." It is admitted that the foregoing will not always be possible, but then no drill will suit every condition of circumstance. Finally, a drill on these lines will undoubtedly speed up reconnaissance and if universally adopted in the infantry will more than prove the truth of our opening sentence : "Time spent on reconnaissance is seldom wasted," because as many reconnaissances as possible will be going on concurrently.

In defence, the procedure would be very much the same and there is no need to elaborate it further here. Too much stress, however, cannot be laid on the use of the map-boards for avoiding strings of co-ordinates, far more prolific in defence than in the attack. It will therefore be much more satisfactory if the Intelligence Officer in the brigade or battalion marks C.O's and company commanders' maps respectively, before orders are given out, with the detail of foremost defended localities, machine-gun fixed lines, artillery defensive fire tasks, etc. This will eliminate verbiage and incidentally should ensure, as far as is humanly possible, that some enterprising company commander does not site one of his platoon localities in the exact spot where his supporting artillery fire will fall most heavily when the S.O.S. goes up.

BLOCKADE IN THE GREAT WAR

By Lieutenant-Commander R. C. M. Duckworth, R.N.

On Wednesday, November 2nd, 1938, at 3 p.m.

Admiral Sir R. G. O. Tupper, G.B.E., K.C.B., C.V.O., in the Chair.

The Chairman introduced the Lecturer.

LECTURE

FOR the sake of brevity, my lecture has been given the title of "Blockade in the Great War"; but in order to forestall criticism I must make it clear at once that I am only going to deal with a limited aspect of the subject—the work of the Northern Patrol in the enforcement of the Blockade. My information has been mainly compiled and checked from official sources, but I have also obtained much valuable assistance from the various books on the subject,[1] and I am particularly indebted to Sir Reginald Tupper for telling me some of his personal experiences.

According to International Law, blockade is defined as "an act of war carried out by the warships of a belligerent detailed to prevent access to or departure from a defined part of the enemy's coast." To be legal, it must be declared and must be maintained with sufficient forces to ensure its being effective. It is a significant fact that in the Great War no blockade of the German coasts was ever declared, as it was technically impracticable. Instead a very elaborate system of economic warfare was developed which depended on our right to capture contraband and on our bargaining power with neutral countries, and it is this system which has come to be known as the Blockade. In any future war it is evident that economic weapons may again play an

[1] The Lecturer specially acknowledges his indebtedness to the following unofficial sources of information :—

"The 10th Cruiser Squadron" (Lecture at the R.U.S.I., February, 1923). By Admiral Sir R. Tupper.

Reminiscences—Admiral Sir R. Tupper.

Seaborne Trade—C. E. Fayle.

The Merchant Navy—Sir Archibald Hurd.

Triumph of the Unarmed Forces—Rear-Admiral M. W. W. P. Consett.

The Big Blockade—Keble Chatterton.

important part. The extent to which they will be found efficient will depend largely on the geographical position of the enemy country and the attitude of neutrals. In some wars the use of economic weapons may be inadvisable or inapplicable, but in others it will be of the utmost importance, and it is therefore essential that the many lessons learnt by bitter experience in the years 1914–18 should not be forgotten. This afternoon I shall, therefore, endeavour to describe from the seaman's point of view how the Blockade was applied in practice and how that vast and efficient organization was gradually developed and perfected.

WAR PLANS

In the original plans for a war against Germany it had been arranged that the Northern exits from the North Sea should be watched by a cruiser squadron to be known as " Cruiser Force B," or the " Northern Patrol Force." The function of this squadron was to intercept all German merchant vessels and armed merchant cruisers, to stop neutral ships going to German ports with contraband, and to deny the Shetlands anchorage to the enemy. It was to be based on Scapa and covered by the Grand fleet at Rosyth. It might be called on by the Commander-in-Chief for particular services, but in general it was to operate as an independent command.

The area of operations was not strictly defined but was to be between the Shetlands and Norway (about 150 miles), and between the Shetlands and Orkneys (about 40 miles). The Admiral was warned that the position off the coast of Norway in Lat. 62° should receive special attention, as it was in this region that ships making their way North or South would have to leave the protection of Norwegian territorial waters. On outbreak of war the force was to proceed to sea in two divisions, one of which was to cruise from the Orkneys to the North of the Shetlands while the other was to go straight across to Norway and patrol near the coast between Lat. 61° 30′ N. and 62° 30′ N.

The ships detailed for this duty were the eight " Edgars." They were completed in 1893–94, and were the oldest cruisers on the list, but they had recently been refitted and could do 17 knots. They displaced just over 7000 tons. Two carried one 9.2-in. and twelve 6-in.; the remaining six carried two 9.2 and ten 6-in. guns. The squadron was normally used for training boys and was manned on a Third Fleet basis. It was commanded by Rear-Admiral de Chair, flying his flag in H.M.S. " Crescent." [1]

[1] H.M.S. "Crescent" was commanded in 1898 by H.R.H. the Duke of York, afterwards King George V.

On 1st August, when the order came to mobilize, the ships were at their home ports. Great efforts were at once made to get them ready for sea, and Admiral de Chair was able to sail from Portsmouth on the 3rd with the " Crescent," " Grafton " and " Edgar." He proceeded West-about, and arrived at Scapa on the morning of the 6th, being joined later that day by the " Endymion " and " Theseus." These ships proceeded on patrol as soon as they had coaled, but it was not until 10th August that the squadron was complete and organized in two divisions, one patrolling off Norway and the other off the Shetlands in accordance with the war plan. Although the North Sea exits were thus left open for about five days after the declaration of war, it appears that we did not miss many ships, as on 31st July the Germans ordered all their merchant vessels to take refuge in neutral ports. The only serious consequence was the escape of the raider " Kaiser Willhelm der Grosse," who passed through this area into the Atlantic between the 5th and 6th August.

As very little shipping had been intercepted, on 15th August the C.-in-C. called on the 10th Cruiser Squadron, as it was now called, to join him in a sweep into the North Sea ; but this proved a very heavy strain on the old ships and their worn-out engines. The Admiralty also objected to their being used for this purpose and emphasized the importance they attached to the patrol by sending four armed liners to augment it. These were the " Alsatian," " Mantua," " Oceanic " and " Teutonic," and they were ordered to patrol between the Orkneys and the Faroes. Unfortunately the " Oceanic " went ashore on Foula Islands on 8th September and became a total loss.

On 25th August, as still no German ships were being stopped, the C.-in-C. asked permission to use the 10th C.S. in the area to the South and East of Kinnaird Head. Here they would cover movements to and from Scapa and Cromarty ; moreover they would no longer require support, and this would free more powerful cruisers for offensive work further to the East and South. The Admiralty approved the C.-in-Cs request and for the next several weeks the squadron became virtually part of the Grand Fleet, working under the Rear-Admiral 6th C.S.

It was in this area that the first loss occurred when, on 15th October, the " Hawke " was torpedoed some 70 miles off Kinnaird Head. She had just received her mails and had resumed patrol when at 10.30 a.m. a torpedo struck her abreast the fore funnel on the starboard side. She sank in a few minutes and only 2 officers and 69 men were saved out of her complement of 570. The submarine was " U.9 " commanded by Otto V. Weddigen who had already sunk the cruisers " Hogue," " Cressy" and " Aboukir."

As a result of the submarine danger the C.-in-C. withdrew the Grand Fleet temporarily from the North Sea to Loch Swilly, leaving the 10th and 3rd Cruiser Squadrons under Admiral de Chair to continue the patrol N.N.W. of the Shetlands.

On 28th October, the loss of the battleship " Audacious " revealed the unpleasant fact that a minefield had been laid off the North Irish coast. The two squadrons were ordered to try and intercept the minelayer, and the following evening the ships of the 10th C.S. were disposed on a line running North from the Shetlands when a suspicious steamer was sighted, and there followed a general chase which lasted until Noon on the following day. The " Endymion " won the race, but instead of an enemy minelayer the stranger turned out to be the Norwegian liner " Bergensfiord " of the Norske-America line on her usual trip from New York to Bergen. Despite the protests of the master and the German Consul-General from Korea, who was on board, she was sent into Kirkwall for examination. This ship and others of the same line gave constant trouble throughout the War. They could do about 17 knots and were always attempting to evade the patrols.

During the chase after the " Bergensfiord " several of the old " Edgars " broke down ; moreover, the winter storms were now beginning and in a terrific gale on the 11th November the flagship " Crescent " was badly damaged and nearly foundered. It very soon became obvious that these ships would be quite unsuitable for the hard work of the winter patrols ; they could neither steam nor fight, they lacked seaworthiness, and they already needed another extensive refit. The C.-in-C. represented these facts to the Admiralty with the immediate result that orders were given for the " Edgars " to be paid off, and their place taken by twenty-four armed merchant cruisers.

On 20th November, therefore, the squadron left the scene of its activities and on 3rd December, Admiral de Chair hauled down his flag in the " Crescent " at Clydebank, rehoisting it on the following day in the armed liner " Alsatian," which was being rearmed with 6-in. guns.

BLOCKADING SHIPS

Practical experience had demonstrated that the main requirements for ships employed on the Northern Patrol were : (*a*) they should be able to remain at sea for at least a month without refuelling or storing ; (*b*) they should be capable of remaining on patrol with safety during the worst weather ; and (*c*) they should have sufficient speed to overhaul any Scandinavian or Dutch liner. Battleships, cruisers or destroyers were obviously unsuitable, and their use for this purpose would have been uneconomic, but the armed merchant cruiser fulfilled all the main

requirements. The Appendix to this lecture [1] gives a list of the ships taken up for the 10th Cruiser Squadron; they were not all ideal, but they had to be requisitioned in a hurry, and selection was therefore limited to those ships actually in port or soon due. The "Alsatian," "Mantua," "Teutonic" and "Cedric" were already in commission, and the three latter maintained the patrol until Admiral de Chair returned on 26th December.

The flagship, "Alsatian," came from the Allen line, and was a first-class mail and passenger steamer of 18,000 tons. She had a maximum sea-going speed of 22 knots, and by stowing coal in the holds could carry 6000 tons, which gave her an endurance of 42 days at 13.5 knots. Of the other ships the Elders & Fyffe vessels of the "Patruca" class were particularly satisfactory as they were of moderate size—6000 tons, good sea-boats, and had a speed of about 16 knots.

These armed merchant cruisers were fitted out, armed and commissioned with all possible speed on the Clyde and Mersey, and a base office under Rear-Admiral Stileman was established at Liverpool. The normal armament was a broadside of four 6-in. guns, but it was some time before sufficient were available and one or two of the ships had 4.7-in. taken out of obsolete cruisers.

They were manned as far as possible with crews from the "Edgars." All the seamen were from the Royal Fleet Reserve, Royal Naval Reserve, or Royal Naval Volunteer Reserve, and they included a number of Newfoundland fishermen of whom we shall hear more later. There was also a detachment of about thirty Royal Marines. The firemen and engineers were all Merchant Service men, and were generally satisfactory; but it took them a little time to settle down to naval discipline. On one occasion at Liverpool the firemen in the "Teutonic" "downed tools" for more pay, but Admiral Stileman promptly marched half a battalion of infantry on board and they were given the option of continuing their work or being shot—there was no more trouble in that ship. A similar outbreak in the "Alsatian" was quelled by the Royal Marines. The Mercantile Marine engineer officers were all given temporary commissions, which accounts for the large number of officers you will find in the list of complements. The Marconi W/T operators were also given temporary commissions. The executive officers were all R.N.R. or R.N.V.R. with the exception of the commanding officer who was a Commander or Captain, Royal Navy. In a number of cases, however, the original Master of the ship stayed on and assisted in navigating and handling his former command.

[1] See p. 337.

At sea, the officers of the watch were in four watches, and two were on deck at a time—one for navigation, and one for gunnery duties. The crews worked in three watches, but picked men did two hours on and six off as lookouts. Boarding boats crews and boarding officers did not keep watch as they had to be ready to go away at any time.

The object of the patrol was laid down as follows: " The primary duty of the 10th Cruiser Squadron is to prevent the escape or return of enemy raiders and to assist in preventing supplies of all descriptions from reaching or leaving the enemy, either direct or through adjacent countries." The new squadron operated in the area between Scotland and Iceland—a distance of some 400 miles, and there were various different patrol lines which were constantly altered in order to deny to the enemy and to all shipping information regarding their exact disposition.

One of the first difficulties had been the choice of a suitable base. The Admiralty had intended the squadron to use Swarbacks Minn in the Shetlands (Busta Voe), but the C.-in-C. considered that this was unsuitable for large liners, and so it was decided instead to provide an anti-submarine boom at Loch Ewe. In the meantime ships had to use Liverpool and the Clyde which were some 600 miles away, and this meant that nearly half the ships were generally absent from their patrol stations.

On 10th January, 1915, orders were received that a special effort was to be made to intercept the " Bergensfiord," and the next day she was stopped and boarded by " Viknor." On board were found the super-spy and passport forger Baron von Wedell, and with him six other Germans. These were all transferred to the " Viknor," and the " Bergensfiord " was sent into Kirkwall under an armed guard. The " Viknor " herself sailed for Liverpool, and this is the last that was ever seen of her. The only clue to her fate was some wreckage, washed up near Port Rush in Ireland, which led to the belief that she hit one of the " Berlin's " mines, in which case von Wedell and his compatriots perished at the hands of their own countrymen.

After this incident no ships were allowed to go near the North Irish coast, and in view of the threat from submarines all patrol vessels were ordered to zigzag constantly at 13 knots.

The next loss occurred at the beginning of February when the " Clan McNaughton," who was on " D " patrol West of the Hebrides just disappeared. No one knows whether she was mined or whether she foundered in a gale.

On 4th February the Germans started their first submarine campaign by announcing that any enemy merchant vessel found in the waters

round the British Isles would be torpedoed on sight. The first victim in the 10th C.S. was the "Bayano," which was torpedoed on the 11th March shortly after leaving the Clyde for her patrol area. Only 25 officers and men were saved out of her complement of over 200.

The squadron had now lost three ships, and the "Calyx" and "Eskimo" had been found unsuitable and were returned to their owners, which reduced the total strength to 18.

THE LEGAL ASPECT

It was also on the 11th March that an Order in Council was published announcing reprisals for the German submarine campaign. This stated that henceforth no ship would be allowed to proceed to any German port and that all exports from Germany were forbidden.

I do not want to go too deeply into the very complicated legal aspect of the Blockade, as it is really outside the scope of this lecture, but in order that you may understand some of the difficulties with which the blockading squadrons were confronted I will recall very briefly how the law stood in 1914. Up to the middle of the XIXth Century the maritime rights of belligerents *vis à vis* neutral countries depended on three old and well-established principles, which were recognized as International Laws. The first and most important of these was the right to capture and confiscate enemy property wherever found upon the high seas (including enemy property on board neutral merchant ships). The second was the right of "visit and search," which empowered a belligerent warship to hold up and board any merchant ship for the purpose of examining her papers and cargo. The third was the right of declaring a blockade, to which I have already referred, and which entitled a belligerent to cut off all communication with the whole or any part of an enemy coast.

In 1856 by the Declaration of Paris these laws suffered a fundamental and, to my mind, disastrous change. Article II of this Declaration laid down that the neutral flag should cover all enemy merchandise with the exception of Contraband of War, i.e., with the exception of such things as guns and explosives, enemy property on board neutral ships was now immune from capture.

During the latter half of the XIXth Century the increase in the number and complexity of modern weapons made the question of defining Contraband one of extreme difficulty. In 1909, at the suggestion of the German Government, an attempt was made to codify the existing regulations, and this resulted in the Declaration of London.

This Declaration divided all goods into three classes: the first—Absolute Contraband, comprised articles of exclusive military utility

such as guns and explosives; the second—Conditional Contraband, included supplies destined for the armed forces of the enemy such as food, fuel and clothing; the third class was the Free List of articles that could not be declared Contraband and included raw materials such as cotton, rubber and metallic ores. It was further laid down that the ship's papers and flag were to be taken as proof of destination and ownership, and that the doctrine of continuous voyage could only be applied to Absolute Contraband. In other words, in the event of a war with England the Declaration allowed Germany to import all raw materials, food, fuel and clothing without let or hindrance either direct or through adjacent neutral countries; and hence British sea power was to all intents and purposes rendered null and void. The Germans naturally received these decisions with particular pleasure, but how responsible British statesmen came to put their signatures to such a document I cannot understand. Once again, if I may missquote Shakespeare " This blessed plot, this earth, this realm, this England, whose rocky shore beats back the envious siege of watery Neptune, was now bound in with inky blots and rotten Parchment bonds."

In point of fact, although the Declaration was approved by the House of Commons, it was rejected by the House of Lords, and consequently never ratified. Despite this, however, we proceeded, for some unknown reason, to adopt the main principles of the Declaration when war broke out in 1914, with the result that for the first two years of the War the Blockade of Germany was little more than a farce. Small wonder, therefore, that all through 1914 and 1915 the sailors afloat in the Blockading squadrons entertained very bitter feelings for Whitehall. They argued that whereas the patrols toiled day and night under the most unpleasant conditions—chasing, boarding and sending ships in for examination which were obviously carrying goods destined for the enemy, the only result was that the bureaucrats with a wave of their pen sent these same vessels and their cargoes speeding on their way.

This much abused organization in Whitehall consisted of the Contraband Committee and the Exports Control Committee. When a ship was brought in for examination all details were telegraphed to these committees and it was they who were responsible for deciding whether or not the ship was to be placed in the Prize Court. Of course they had a very difficult task; on the one hand it was essential to keep in with the neutrals, especially the United States, and on the other it was equally necessary to prevent goods reaching the enemy. As early as 20th August an Order in Council was issued modifying the provisions of the Declaration of London by making Conditional Contraband subject to the Doctrine of " continuous voyage." But the Free List still remained,

and Germany continued unhindered to import all the raw materials she required for the prosecution of the War. In England, the biggest outcry was against our allowing cotton to reach Germany. Ship after ship with cotton from America consigned to Gotenburg was intercepted by the patrols, and brought into Kirkwall, only to be released by orders from Whitehall. The Germans were naturally very grateful; the cotton was quickly turned into high explosive and returned to us with thanks in the shape of shells, mines and torpedoes.

This appears very absurd and yet it was only on the 22nd August, 1915, after a violent Press campaign and a debate in the House of Commons, that cotton was finally declared Absolute Contraband.

THE PATROL IN 1915

During the summer months with their long hours of daylight, additional patrols were established to the North and South of Iceland and off the Norwegian coast. This arrangement required twenty-seven patrol vessels and only eighteen were available. However, six new ships were taken up and they were larger and faster than the majority of the earlier units of the Squadron.

The increase in the number of ships and patrols and the danger from enemy submarines now called for a reconsideration of the question of bases. At the end of April, 1915, after conferring with the C.-in-C. and inspecting Loch Roag in the Hebrides, Admiral de Chair visited Busta Voe in the Shetlands and decided that, if suitable protection, coaling and storing facilities were provided, this was undoubtedly the best base. It was conveniently situated, there was room for seven liners to lie at single anchor and a good supply of water ashore. His recommendations were approved, the necessary work was at once put in hand, and by the end of July the base was practically completed. The " Gibraltar "—one of the old " Edgars "—was used as base ship and had a permanent coaling party of 60 R.N.R. stokers. To give an idea of the fuel and water requirements, the Squadron was at this time consuming, on an average, 1600 tons of coal and using 100 tons of water a day. In six months the " Alsatian " had steamed 36,000 miles, burnt 20,000 tons of coal, and used 13,000 tons of water.

During this period serious efforts were made to stop the iron ore which was reaching Germany from Narvik. The ships crept down the Norwegian coast inside territorial waters, and it was very difficult to stop them. A submarine was tried without success, but a trawler patrol had better luck, and on 8th July, the " Tenby Castle " sank the German ship " Friedrich Arp." The Germans soon discovered this Norwegian patrol, and on 8th August the armed merchant cruiser " India," who was

supporting the trawlers, was torpedoed and sunk. Ten officers and 113 men were lost. The Captain and 189 others escaped in a trawler, but owing to lack of food and accommodation they were forced to proceed to a Norwegian port, and were consequently interned for the rest of the War. The trawler patrol was continued until the winter, but the iron ore problem was never really solved.

Throughout the summer months of 1915 the patrols continued their work with increasing efficiency, and very few ships whose interception was specially desired were ever missed. The operation of interception and boarding was brought to a very fine art which, I think, is worth describing in some detail.

All patrol vessels were fitted with a crows' nest and as soon as a stranger was sighted she was closed at full speed. Before coming within range all guns were manned in case she might prove to be a raider. When within about 5000 yards she was ordered to stop ; if she refused, a blank charge was fired, followed if necessary by a live shell across the bows. The cruiser usually lowered her boat ahead of the merchant vessel and then ordered her to approach it. When the boat had been dropped the cruiser either held off at a respectful distance or else steamed round and came up astern in a position which would make it difficult for a disguised raider to fire a gun or torpedo.

The general practice when lowering boarding boats was to steam very slowly ahead with the sea just on one bow, but methods varied in different types of ship. It was, of course, purely a matter of seamanship. Some Commanding Officers preferred the Service type of cutter and automatic dropping gear ; others used the small double-ended type of Merchant Service life-boat. The latter was stowed on the fore well-deck and hoisted out either side by the ship's cargo derricks. A single wire fall led from a winch and ended in an ordinary coalbag hook, which was attached to the ring of the boats single span slings. Admiral Tupper informs me that he much preferred the second method, and that no great difficulty was found in unhooking or hooking on even in bad weather.

The Newfoundland fishermen, who as I have already mentioned formed part of some of the ships' companies, gained a great reputation for the magnificent way in which they handled the boarding boats in heavy seas. All the same there were many instances in which boats were swamped or smashed alongside, and boarding sailing vessels proved particularly difficult.

The boats usually went away under oars, but sails were occasionally used, and the " Alsatian's " boat had an outboard motor—presumably the " perks " of the flagship !

Boarding Parties

The actual Boarding Party consisted of two officers and one signalman armed with revolvers. The Boarding officers were R.N.R. officers, and I should like to emphasize that their knowledge and experience were found invaluable.

Their reception on board varied. In the case of Dutch and Danish ships there was little cause for complaint, but the Swedish Masters were often truculent and difficult. The first thing was to make sure that the ship was not a raider in disguise. As soon as they were certain of this a secret signal was made to the cruiser. One officer then tackled the Master while the other interviewed the Chief Officer. If all papers were in order and there was nothing suspicious about her, the ship was given the flag of the day and allowed to proceed. This flag saved her from being boarded by another patrol vessel on the same day.

Armed Guards

If it was thought necessary to send a ship into Kirkwall or Lerwick for examination an armed guard was sent on board. In the case of a moderate-sized steamer the guard generally consisted of one officer, one petty officer, and from four to six men. Officers were armed with revolvers and men with rifles. They took their food with them for the trip, although some shipping lines made them the guests of the company.

The duty of the Armed Guard was to compel the Master to take the ship into the examination port. The officer in charge was not responsible for the navigation, but sometimes he had to take a hand when the Master or crew refused duty.

Although each cruiser was allowed two officers and twelve men in addition to her normal complement, the provision of these armed guards sometimes caused a serious depletion in the ships' companies. On one occasion no less than twenty-one armed guards were away at the same time. The difficulty was to get them back again, and in the Spring of 1915 an armed boarding steamer had to be provided for this purpose.

Awkward situations frequently arose when neutral merchant ships with armed guards on board were stopped by enemy submarines. In one or two instances the guards got away successfully by disguising themselves as the neutral crew. The Royal Marines of the armed guards were given a special issue of trousers without a red stripe, presumably to facilitate their doing a quick change act to a Norwegian seaman.

French Co-operation

The summer of 1915 gave way to autumn, and autumn soon became winter with its long nights and terrible gales. In November it was

decided for political reasons that the French should take part in the Northern patrols. The " Digby " and " Oropesa " were therefore turned over to them at Brest and were renamed the " Artois " and " Champagne." These ships used to coal at Busta Voe, but returned to Brest to give leave and, as one of their Commanding Officers was heard to say, " to make wine."

During the year 1915 a total of 3098 ships were intercepted, of which 743 were sent in under armed guard. The maximum number of ships intercepted in any week was 110, of which 30 were sent in. Of the ships intercepted, 857 were Norwegian, 606 Danish, 300 Swedish, 8 Dutch, 1 Spaniard and 1 Argentine. The average number of armed merchant cruisers on patrol was about twelve. An area of 200,000 square miles had been continuously patrolled in all weathers and in circumstances made particularly difficult by the presence of enemy submarines. Although, during the last five months of the year Norway and Denmark received seventy-seven cargoes of which we had no particulars, only eight ships whose interception was specially desired managed to avoid the patrols. The " Alsatian " was at sea for 262 days out of the 365, and steamed 71,000 miles consuming 40,000 tons of coal. This is a typical figure for the whole squadron.

THE PATROL IN 1916

The advent of 1916 was accompanied by a series of very heavy north-westerly gales during one of which the boom gate vessel at Busta Voe dragged her moorings and temporarily blocked the entrance. At sea the dangerous and arduous work continued, but ashore, especially at Liverpool, ships were constantly being delayed by labour troubles. Some ships were even prevented from leaving the Clyde owing to the workmen's Christmas holidays.

On 29th February the " Alcantara," assisted by the " Andes " and " Comus," fought an action against the armed raider " Greif," which ended in both the " Alcantara " and the " Greif " sinking. Our patrols had been warned that a raider might be expected and so were all on the alert when the " Andes," and shortly afterwards the " Alcantara " sighted a suspicious ship. The stranger was flying Norwegian colours and had the name " Rena " painted on her stern. The " Alcantara," commanded by Captain Wardle, had closed within about 2000 yards of the stranger when down dropped her sham deckhouses, up went the German colours and she opened fire. A hot engagement ensued which resulted in the " Alcantara " sinking after half an hour, probably as the result of a hit by one of the two torpedoes fired at her by the " Greif." By this time the German vessel was also out of action, and she was

finished off by the " Andes " and " Comus." One officer and 110 men were rescued from her crew of 360, while two officers and 67 men from the " Alcantara " were either killed or drowned.

THE END OF THE DECLARATION OF LONDON

Now I want to turn again to the legal aspect of the Blockade. You will remember that in August, 1915, cotton had at last been declared absolute contraband. At about the same time a Black List was started of firms in neutral countries with whom all trade was forbidden, and an effort was made to introduce the " quota " system for neutrals. Despite all this, at the beginning of 1916 the situation was still far from satisfactory. The Foreign Office, by way of explaining their policy, published a White Paper on the subject, but the only effect of this statement was to produce a storm of abuse throughout the country. The C.-in-C. Grand Fleet also took the matter up and the following is an extract from his letter to the Admiralty dated the 13th February, 1916.

" It seems evident that the Blockade is not producing the results which should accrue from the number of vessels intercepted, and that we are not using to the full a weapon which might materially reduce the duration of hostilities."

At length, owing to the extreme dissatisfaction of the country (and especially the Navy), the Government decided to establish a Ministry of Blockade. On the 23rd February, Lord Robert Cecil was appointed as Minister with a seat in the Cabinet, and owing to his great experience at sea, Admiral de Chair was selected as naval member. This was a great step forward. The new Ministry soon got to work and put an end to the vacillating and inefficient policy which had been pursued up to that time. By the middle of 1916, the Blockade could be said to be really effective. The basic policy was that of rationing neutrals, and trade agreements were made with Holland, Denmark and Norway. The Black List was extended, and the work of the patrols was aided by the introduction of Letters of Assurance (Navicerts) which were issued to neutral shippers for approved cargoes. The control of bunkering facilities was a further valuable lever, and a Black List of ships that were to be refused bunkering facilities at British ports was issued.

Ultimately the Allied Governments came to the conclusion that the application to warfare under modern conditions of the rules laid down in the Declaration of London could no longer be upheld, and on the 7th July, 1916, by the Order in Council on Maritime Rights, the ill-begotten document was finally repudiated and buried with full naval dishonours.

Rear-Admiral de Chair had been succeeded in command of the 10th C.S. on the 6th March, 1916, by Vice-Admiral Tupper, who up to that time had been Senior Naval Officer at Stornoway. For the Patrols, the summer and autumn of 1916 passed without any outstanding incidents, but by November the bad weather and long dark nights were once again making life in these blockading ships one of strenuous hardship.

December was marked by the unlucky escapes of the German raiders " Moewe," " Seeadler " and " Wolf." It was on the night of the 2nd that the " Wolf " passed through the patrols disguised as the Dutch liner " Gamma." She was intercepted about midnight by the " Teutonic," and some four hours later by the " Avenger " ; but as the weather was bad and the Admiralty had given orders that Dutch Mail ships were to be delayed as little as possible, she was not boarded and allowed to proceed. The trick was discovered when the real " Gamma " arrived at Kirkwall.

The escape of the "Seeadler" was even more unfortunate. This ship was originally the American barque "Pass of Balmaha" ; in June, 1915, she was captured by a German Submarine whilst being taken in for examination under an armed guard from the " Victorian." In 1916 the Germans fitted her out as a raider, and she was very cleverly disguised under the direction of her commanding officer, Count von Lueckner, to resemble the Norwegian barque "Irma." This disguise proved so effective that when on Christmas morning she was stopped by the "Patia" the boarding officers were completely taken in and the raider escaped.

The " Moewe " unfortunately got through without being intercepted and was first heard of in the Atlantic. This was her second successful cruise.

THE UNRESTRICTED SUBMARINE CAMPAIGN

On the 1st February, 1917, Germany started her unrestricted submarine campaign. The immediate result was to make the work of the patrols even more difficult than before. As far as possible ships were kept steaming at high speed and zigzagging. Stopping to board was now dangerous for neutrals and cruisers alike, but very fortunately no ship was ever attacked whilst so employed. In order to get over the danger arising from sending neutral vessels into ports in the United Kingdom, steps were now taken to examine them abroad at such places as Halifax, Kingston (Jamaica) and Port Said.

On 16th February we issued a Reprisal Order which affirmed that henceforth any vessel met with at sea on her way to a neutral port giving access to enemy territory, and which had not called at a British

port for examination, would be deemed to be carrying goods destined for the enemy and dealt with accordingly.

On the 6th April the United States declared war, and soon afterwards imposed a general embargo against Holland and the Scandinavian countries. From this time on, the necessity for the blockading squadrons virtually ceased to exist, as most of their work was now carried on by people sitting in comfortable offices on both sides of the Atlantic surrounded by card indexes and telephones.

However, for the Patrols, the year 1917 was by no means devoid of excitement. On 16th March the German raider " Leopard " (ex-British " Yarrowdale ") attempted to escape into the Atlantic, but was intercepted by the armed boarding steamer " Dundee." Like the " Greif," she also was disguised as the Norwegian " Rena." The " Dundee's " boarding party had just got on board when she hoisted German colours and opened fire. The " Dundee " might well have come off worst, but luckily the light cruiser " Achilles " was at hand and sank the raider with a few salvoes. The boarding party were never seen again.

Submarines took a heavy toll of the Squadron during the year, and the " Hilary," " Otway," " Champagne " and " Avenger " were all torpedoed between May and October. This shows the extreme vulnerability of this type of unprotected merchant cruiser when operating in submarine infested waters.

THE LAST OF THE 10TH C.S.

By June, the 10th C.S. had been reduced from eighteen ships to twelve, and early in December, 1917, the Squadron was abolished and their work was taken over by the 2nd Cruiser Squadron, based on Scapa Flow. This squadron was reconstituted and consisted of the two cruisers "Minotaur" and "Shannon," three armed merchant cruisers—the " Alsatian," " Orvieto " and " Teutonic," two armed boarding vessels, and twelve trawlers.

The remaining ships of the 10th C.S. were dispersed and used for the new and important duty of convoy protection. Their work on the Northern Patrol had been magnificent ; as Mr. Balfour afterwards said in a speech at Montreal : " The labours of the Tenth Cruiser Squadron, who carried out the Blockade were, more continuous, more important, and more successful than those of any other branch of His Majesties naval forces."

During the period from August, 1914, until December, 1917, the squadron intercepted 8500 ships and boarded some 4500 fishing craft.

Of the ships intercepted, 1800 were sent in under armed guard. Statistics show that altogether 75 per cent. of the ships which passed through the area were intercepted by the patrols. Of the remaining 25 per cent., 18 per cent. made voluntary calls at examination ports, and so only 8 per cent. escaped. I believe the actual figure for the latter has been worked out at 740 ships.

The strength of the 10th C.S. never exceeded twenty-five armed merchant cruisers and eighteen trawlers, but the number on patrol was always much less than that as ships were constantly away coaling, refitting or giving leave.

Despite the difficulties of navigation, the long nights and heavy gales, the bad visibility, and the necessity for steaming without lights there were remarkably few accidents. In fact, there were only two serious collisions, and the " Oceanic " was the only ship to be stranded. However, losses as the result of enemy action were heavy, and included the cruiser " Hawke," nine armed liners and two trawlers. Altogether about 100 officers and 1000 men lost their lives.

CONCLUSION

As Mr. Keble Chatterton says in his book *The Big Blockade*, " This was a heavy price to pay but it was well worth while, for this, the biggest of all blockades that the world has ever seen was so devastatingly effective in breaking the enemy's morale that Germany's first request at the Armistice was that the Blockade might be raised forthwith."

While it is true that the old idea of a close blockade had to be modified, and that our blockading squadrons worked at a respectful distance from enemy territory, I think that it is fair to say that the Blockade of Germany in the Great War was in every way as effective as our close blockades of earlier centuries.

Finally, let us not forget that the continuous and successful work of the Northern Patrols was only made possible by the cover afforded by the Grand Fleet.

APPENDIX I

THE 10TH CRUISER SQUADRON FROM DECEMBER, 1914

Admirals Commanding :—

August, 1914, to March, 1916, Rear-Admiral Dudley de Chair.
March, 1916, to December, 1917, Vice-Admiral R. Tupper.

SHIPS TAKEN UP IN 1914

Ship.	*Date Built.*	*Reg. Tonnage.*	*Full Patrol Speed.*	*Complement. Officers.*	*Men.*	*Owners.*
Alsatian	1913	18485	19.5	67	480	Allen Line.
Teutonic	1889	9984	19	56	380	White Star.
Cedric	1903	21040	16.5	48	330	,,
Otway	1909	12077	18	45	320	Orient.
Columbella	1902	8292	17	28	270	Anchor.
Patia	1913	6103	16	28	200	Elders & Fyffes.
Patuca	1913	6103	16	28	200	,,
Bayano	1913	5948	14	28	200	,,
Motagua	1912	5977	14	28	200	,,
Changuinola	1912	5978	14	27	190	,,
Mantua	1909	10855	17.5	48	320	P. & O.
Hildebrand	1911	6991	14.5	30	270	Booth.
Hilary	1908	6329	14	30	220	,,
Ambrose	1903	4595	14	33	260	,,
Virginian	1905	10757	17	40	220	Allen Line.
Caribbean	1890	5824	14	—	—	Royal Mail.
Orotavia	1899	5980	14	34	200	,,
Oropesa	1895	5364	13	40	200	Pacific S.N. Co.
Eskimo	1910	3326	—	—	—	Wilson.
Calyx	1904	2876	12	—	—	,,
Digby	1913	3966	14.5	23	210	Furness Withy.
Clan McNaughton	1911	4985	11	20	257	Clan.
Viknor	1888	5386	—	22	272	Viking Cruising Co.

SHIPS WHICH JOINED LATER

Ebro	—	8464	16	33	230	—
India	—	7940	16	32	270	P. & O.,
Alcantara	—	15831	16	38	300	R.M.S.P.
Orcoma	—	11546	16	39	280	,,
Andes	—	15620	16	40	300	,,
Arlanza	New	15044	16	39	220	,,
Almanzora	,,	16634	16	—	—	,,
Avenger	,,	15000	16	—	—	—
Orvieto	—	—	15–16	—	—	—
Victorian	—	—	—	—	—	Allen Line.
Gloucestershire	—	—	—	—	—	Bibby.
Moldavia	—	—	—	—	—	P. & O.
Kildonan Castle	—	—	—	—	—	Union Castle.
Armadale Castle	—	—	—	—	—	—

18 Iceland trawlers.

NOTES.—(i) The " Cedric " was returned as being too big.
(ii) The " Calyx " and " Eskimo " were returned as too small.
(iii) The " Viknor's " peacetime name was " Viking."
(iv) The " Digby " and " Oropesa " were turned over to the French in November, 1915, and renamed " Artois " and " Champagne."

APPENDIX II

10TH CRUISER SQUADRON

SHIPS LOST AND NUMBER OF LIVES LOST

Ship.	*Gross Tonnage.*	*Date of Loss.*	*Cause of Loss.*	*Killed (including Died of Wounds).* *Officers.*	*Men.*
Viknor	5386	13. 1.15	Lost off Irish coast.	22	272
Clan McNaughton ..	4985	3. 2.14	Believed to have foundered in North Atlantic.	20	257
Bayano	5948	11. 3.15	Sunk by submarine off Corsewall Pt., Galloway.	15	182
India	7940	8. 8.15	Sunk by submarine off Norwegian coast.	10	113
Alcantara	15300	29. 2.16	Sunk in action with the raider "Grief," in Lat. 61° 48 N., Long. 1° 40 E.	5	69
Hilary	6239	25. 5.17	Sunk by submarine in Atlantic.	—	4
Avenger	15000	14. 6.17	Sunk by submarine in N. Atlantic.	—	1
Otway	12077	23. 7.17	Sunk by submarine in N. Atlantic.	—	10
Champagne	5360	9.10.17	Sunk by submarine in Atlantic.	5	50
Totals	78235	—	6 sunk by submarines.	77	958
			1 sunk in action.	26	104
			2 lost.	(armed guards)	
				103	1062
				1035	

NOTE.—The "Oceanic" was wrecked on Foula Island on 8th September, 1914. No lives were lost.

DISCUSSION

VICE-ADMIRAL C. V. OSBORNE: Can the Lecturer give us any information with regard to the disposition of the ships and the general methods by means of which the 10th Cruiser Squadron was able to pick up such a large percentage of merchant ships? It really seems remarkable in view of the long hours and the small number of cruisers on patrol. The way in which this was done appears to me to be the most important aspect of the blockade from the technical point of view.

THE CHAIRMAN: May I answer that question at once? There were two different systems of cruising on blockade: one was the cross patrol and the other the in-and-

out patrol. In the cross patrol, the cruisers steamed in line ahead, roughly 30 miles apart, steering a particular course for a number of hours and then on the opposite course for a number of hours. This patrol was across the general course of the vessels it was desired to intercept.

In the other type of patrol, a parallel, or nearly parallel, course was steered to that of the vessels it was desired to catch—cruisers being about 30 miles apart. A line of bearing was given from a certain latitude and longitude, and the cruisers were told to steer on certain courses so as to cross that line of bearing at, say, noon and 6 p.m.; alternatively, the Admiral, instead of making them cross it twice in 24 hours at regular intervals, could order them to steam 8 hours to the eastward and 16 hours to the westward, so that they would be on the same course as the vessels they were trying to intercept during daylight. That was how it was generally done.

When it was desired to board a merchant ship, a ball and a big red pennant were hoisted. Instructions had been circulated that when a ship saw that signal and when a blank charge was fired she was to stop. If she did not do so, a shot was fired across her bows, and if that was not sufficient, the practice was to steam straight ahead of her, which practically always stopped her. If it did not, it was sometimes necessary to fire into her.

CAPTAIN T. DANNREUTHER, R.N.: In addition to what the Chairman has just said about our system of patrol lines, there was the problem of intercepting shipping in fogs and heavy gales with the cruisers out of sight of one another even in the finest weather. Many ships were boarded in fog after following the sound of a foghorn or whistle to ascertain the course and speed before closing to stop them. In really bad weather all ships had to heave to whatever the patrol system in use, but bad weather did not necessarily mean missing shipping, although it sometimes meant inability to lower boats to board.

A patrol line of cruisers is rather like the geese in the game of "fox and geese": with good visibility shipping will be intercepted if the line is properly placed, but if there are gaps in the line it is a mathematical impossibility to prevent leakage.

There was one cause of leakage of goods through our blockade which has not been mentioned but which is important. We have always asserted the principle that, when neutral, the trade between England and our Dominions or colonies shall not be subject to interference by belligerents; consequently it behoves us to be careful not to interfere with neutral trade between any mother country and its own colonies when we are a belligerent. This accounts for our having left Dutch steamers trading between Holland and the Dutch East Indies and also the trade between Denmark and Iceland alone, unless continuous voyage to Germany could be proved for contrabrand goods. Even that source of leakage was eventually reduced to a questionable extreme; for example, compare the following case with the provisions of the Treaty of London which we were enjoined to follow in 1914: on 21st April, 1917, I boarded the Danish topsail schooner "Delos" bound from Cadiz to Iceland with only a ballast of salt on board—about as innocent a voyage as can be imagined; yet, by my instructions, I could only release this vessel on obtaining a written declaration from the Master that the salt would not be sold for curing fish without the fish being offered for sale first to our Iceland Consul for fear that the food might eventually reach Germany.

CAPTAIN A. C. DEWAR, R.N.: Apart from the work of the 10th Cruiser Squadron and the losses it suffered, I think this subject is one of particular interest because it was part of a big system of economic pressure.

There has been a great deal of misconception arising out of the work of the Ministry of Blockade, and you can see it in some books on the subject which represent blockade as being merely a matter of reciprocal negotiations in which naval forces count for very little. Blockade—that is economic pressure—in the War was partly a matter of bargaining with neutrals, but our bargaining would have counted for little without the control exercised by the 10th Cruiser Squadron and other naval forces. But it was not everyone who saw the 10th Cruiser Squadron, and the idea of exerting economic pressure with no force behind it grew up after the War and appeared in discussions about sanctions. At one time it was suggested that sanctions might be applied against Italy by stopping her supplies of oil—as if a measure of that sort were merely a question of negotiations with no naval repercussions!

Sanctions without force behind them are a mere dream, for you cannot enforce them unless you have something to enforce them with. That was the task of the 10th Cruiser Squadron in the Great War and its history is a very important part of the War.

SIR LIONEL FLETCHER: In 1912 I was Chairman of the Liverpool Steam Ship Owners' Association, and we sent a very strong protest against the Declaration of London, but it had no effect.

In his book *The Big Blockade*, Mr. Keble Chatterton makes reference to the case of the "Greenbriar," and to the question why that ship was released. I have a letter on the subject explaining that it was because the boarding officer hoisted the White Ensign, and being an American ship—though full of contraband—she had to be allowed to go just for that one reason.

THE CHAIRMAN

Captain Dannreuther forgot to mention that we had three different kinds of fog signals. In the "Alsatian" we had a very small whistle, the big booming horn used by Transatlantic mail steamers, and the Admiralty had fitted a siren. When we were chasing vessels in a fog we used the kind of whistle most suitable to the quarry. On one occasion we were ordered to intercept a particular ship from America—a small ship which had a valuable contraband cargo, and we had an extraordinary piece of good luck. We were in a very thick fog at the time and we were using our small whistle, because we always thought that that would make people think that there was nothing very important nearby. We heard another small whistle and chased it; in the end, owing to our using our small whistle and being answered by her small whistle, we found the very ship we wanted, and she had a most valuable cargo destined for the enemy.

I want to impress on young officers the importance of keeping the crews exercised and of taking their minds off the monotony of being at sea for thirty or forty days on end. In each ship we fitted up a big recreation room with a stage at the end of it, and we used to encourage concerts, theatricals, and boxing competitions. There were writing tables at which the ship's company could write their letters, and play games, and a miniature rifle range where there were competitions between all the various ratings, including stokers, firemen and others. It was those sort of things that kept us all alive.

The customary votes of thanks to the Lecturer and Chairman were carried by acclamation.

THE ORIGIN OF THE ARMED MERCHANT CRUISER

By Frank C. Bowen

AS a result of the crisis of 1885, when Britain was on the verge of going to war with Russia, the country realised with a shock that in certain important respects the Navy was unfitted to perform what was and is one of its primary functions in war—the safeguarding of our seaborne supplies (the other being, of course, to deny the use of sea transport to the enemy).

At that time the Russian Navy, although greatly inferior to the British in capital ships and the like, was particularly strong in a type which was designed, quite openly, to operate against British commerce. This was the lightly armed, unarmoured corsair cruiser popularly known as the "steam clipper." These vessels were of small size but relatively high speed under steam, although they were intended to do most of their cruising under sail. The achievement of the American "Alabama" had been freely exploited to work up popular enthusiasm for them and they were to be reinforced by the Russian Volunteer Fleet, started by public subscription in 1877 with the idea that the ships would maintain themselves as merchantmen in peace—with the help of a very generous subsidy —and raid British shipping in war.

In the 1885 crisis the greater part of the Russian Fleet was bottled up in the Baltic and Black Sea, but there were enough ships of the corsair type outside, and in the Far East, to be dangerous to our commerce. As there are always very long odds in favour of the attacker in any corsair campaign, the British public became interested in the force which we had available to protect our shipping and it was not encouraging. Some of the earlier ironclads, with heavy batteries and comparatively high speed but very poor coal capacity, were classed as armoured cruisers and in peace time made excellent flagships on distant stations, able to show the flag worthily and to protect British interests, but they were almost useless, and terribly extravagant for protecting commerce from small raiders. Apart from them, and the ships which were obviously wanted to screen and scout for the battle squadrons, the Navy was deplorably short of cruising ships.

The obvious, and indeed the only course was to turn to the Merchant Service, as the Navy had done from time immemorial; but there was the immediate handicap of the lack of any proper organization. In the old days of sail the King's officers, generally with the assistance of Trinity House, had seized any vessels which happened to be in British waters, the wastefulness of this system to the Treasury depending largely on the willingness of the Government of the day to pay for what it took. The introduction of steam and the growing specialisation of the different types made this system most unsatisfactory in every way, but the Admiralty had been very behindhand in replacing it. In 1845, by order of Parliament, a return was published which included all the steam vessels registered in the United Kingdom, giving essential details and stating the armament which it was considered each ship was capable of carrying in war time. But nothing further was done until 1853 when, in view of the growing tension with Russia, it was proposed to include a scheme for an auxiliary cruiser reserve in all future mail contracts.

In 1868, when the immediate manning difficulties of the Fleet had been dealt with and the Royal Naval Reserve had been put on to its feet, the Admiralty produced a scheme for arming all suitable merchant ships in war, but directly it was realized that they would need five hundred guns the scheme was abandoned on the score of economy and nothing more was heard of it. The next move was in 1876, just before the Russo-Turkish War, when the principal shipowners were informed that the Admiralty proposed to compile a list of suitable ships for use as auxiliary cruisers and were asked to offer their services, the idea being that no subsidy would be paid but that the owners would be promised preference whenever ships were required for Government service. Within the next few years over 900 ships had been offered for this list, but examination had struck out all but 207 of them. It was obvious that this half-hearted scheme was inadequate, and for several years all the initiative came from the shipowners who put forward various ideas to help the Navy. Whitehall received these with courtesy and apparently gave them a good deal of careful thought, but they were tied by the Treasury and no definite progress was made except to keep the 1876 list up to date. It should be noted that since that scheme had been put forward several shipowning companies and individual shipowners had given striking proof of their patriotism, for although they had very little or nothing at all to gain by it, they had built their ships to Admiralty requirements.

The question of manning also had to be given the most careful consideration; the Navy had very few regular officers or ratings to spare and the auxiliary ships would have to look to the Royal Naval Reserve. That had been founded by Act of Parliament in 1859 and the commissioned

ranks were added in 1861. In 1885 the captain of the biggest liner afloat could not rise beyond the rank of Lieutenant R.N.R., and there were 84 on the list against an establishment of 130, and 227 Sub-lieutenants and Midshipmen out of an establishment of 270. The 300 engineer officers provided for were also very far under strength, but when the crisis arose the captain of every transport and merchant ship on Government service invited his engineers to volunteer for war service and there was not a single refusal. The manning plan produced by the Admiralty, after providing for the drafting of ordinary seamen and A.B.'s of the Royal Naval Reserve to men-of-war in the First Reserve, was that one-third of the deck complement of the commissioned liners in home waters should be R.N.R. men and that those commissioned abroad should have at least 20 R.N.R. seamen each.

The Admiralty then set about commissioning the ships which it wanted for auxiliary cruiser purposes, all of which were on the Admiralty List; incidentally they also took up 118 steamers as transports and store carriers, of which only 25 were on the list. In Home waters the most promising ships seemed to have been the express vessels on the Liverpool-New York service, and in this class there were available the National liner "America," the Cunard liners "Oregon" and "Umbria", and the Guion liners "Arizona" and "Alaska." These were all chartered by the Admiralty for a minimum term of six months, the standard rate being £1 2s. 6d. per gross ton per month when the owner found the crew, and 15s. when the Government attended to the manning. Another ship in Home waters was the Union liner "Mexican" chartered at £1 per ton-month, and intended to reinforce the Cape Station; she was sent out to receive her guns in South Africa. Other ships were taken up in the Mediterranean, Red Sea, Cape, Australian and Far Eastern waters at similar prices and sent to various centres, from Coquimbo to Hong Kong, to receive the necessary guns, and equipment.

Altogether a fleet of sixteen ships was taken up which was, considering all things, a big fleet to collect in a short time; it gave a good deal of confidence to the public at home and it certainly made an impression in Russia. It was not the fault of the ships or the men who were trying to take them to sea that the war clouds passed away before the great majority of them were ready for service; and it was not until afterwards that the confusion and extravagance of their commissioning and the total lack of a proper organization for putting them to the best use were revealed.

In Home waters the "America," "Umbria," "Arizona" and "Alaska" did not leave port, although £36,000, £48,000, £28,000 and £42,000 were spent on them respectively—and those represented very much larger figures in the 'eighties than they would to-day. The "Mexican," on

which £46,000 was spent, arrived in South Africa after the trouble was over so that the orders to arm her were countermanded and she took troops from the Cape to Hong Kong, returning to England with time expired. The "Oregon" was kept in commission in order to test the possibilities of auxiliary cruisers and her experience will be given later. Having landed her troops at Suakim, the "Pembroke Castle" proceeded to Hong Kong, was converted to a cruiser and reconverted without leaving the port. The "Stirling Castle" was sent to Malta to receive her guns, but there the orders were changed and she was fitted out as a transport to bring troops home from Egypt at a cost of £37,000. The "Moor" received a crew of 110 officers and men—practically all Royal Naval Reservists, from the Union and Castle liners in Capetown and was commissioned as a warship to cruise up the East Coast of Africa, as it was considered probable that Volunteer Fleet cruisers from the Black Sea would be used to raid in that area. The "India" had £29,000 spent on her at Hong Kong and was reconverted without leaving port. In Australia the efforts of Admiral Tryon showed what could be done, the "Massilia" and the "Lusitania" being converted there in an infinitely shorter time than any other ships—even those which had the assistance of the Royal dockyards at home—and making a very good showing by the enthusiasm of their R.N.R. crews; £52,420 was spent on the former and £35,000 on the latter. The "Coptic" arrived at Coquimbo, but by that time the horizon was clearing and the guns, which were stored in a station ship there, were never installed. The "Britannia" received her armament and was duly commissioned, but returned the guns to store and was paid off in England. In Hong Kong the "Glenogle" and the "Rosetta" received their guns. In the case of the ships at Hong Kong, there were very few white R.N.R. seamen in port and the greater part of their crews were drawn from the bigger men-of-war on the Station.

In every case the auxiliary cruisers received a very miscellaneous armament owing to the absence of any organization for reserving guns against an emergency. The strengthening of the gun positions was generally quite inadequate and the magazine and ammunition-passing arrangements primitive in the extreme. In Home waters the crack Atlantic liners "America," "Oregon" and "Umbria" received four 5-in. breech-loaders and six 64-pdr. muzzle-loaders each; the "Arizona" had to be content with ten 64-pdrs. and the "Alaska" with ten 40-pdrs., the latter being breech-loading. The "Rosetta," "India," "Glenogle," and "Pembroke Castle" were given one 40-pdr. breech-loader, four 64-pdr. muzzle-loaders, and two machine guns. The "Massilia" had three 40-pdrs. and six 64-pdrs.; the "Lusitania" two 40-pdrs. and six 64-pdrs.; the "Moor" two 40-pdrs. and four 64-pdrs.; and the "Britannia" a mixed armament that must have broken the heart of any gunnery officer, consisting of two

70-pdr. muzzle-loaders, one 64-pdr., four 4-in. breech-loaders and four machine guns. The other ships taken up were not armed. Not only were the guns so mixed, but the R.N.R. officers and men had only been trained in obsolete muzzle-loaders in the coastguard batteries and the truck carriages proved quite unsuitable for merchant ships as the handspikes had an unfortunate tendency to go right through the unprepared decks.

According to the arrangement made when the scheme was first put forward, the "Oregon," which was an 18.5-knot ship of 7,375 tons gross, with an iron hull built in 1883, was to have been the flagship of Admiral Sir Michael Culme-Seymour in a special fast squadron, and over a hundred cabins were ruthlessly destroyed to provide a certain amount of protection by bagged coal for the engines and boilers. The work was practically done when the crisis passed and it was determined to carry on with her full equipment and to test the value of the auxiliary cruiser in the Fleet. Her first and second officers in the Cunard service—she had been taken over from the Guion Line shortly before—and all the engineer officers were retained; Captain E. H. Seymour, R.N., was appointed in command with a number of naval officers and a purely naval deck crew. Merchant-service firemen were engaged at Liverpool, but after 24 hours under naval conditions they decided to strike. A detachment of Royal Marines with fixed bayonets and ball cartridges caused them to change their minds, and it is interesting to note that, after they had obtained a real taste of naval conditions, the great majority enrolled in the Royal Naval Reserve.

The "Oregon" joined a miscellaneous squadron collected at Portland under Admiral Sir Geoffrey Phipps Hornby, C.-in-C. at Portsmouth. After carrying out an independent cruise to Gibraltar, she rejoined the flag at Berehaven where she took part in a number of exercises with the Squadron off the West Coast of Ireland. Her eighteen knots made her the fastest ship in the Fleet, but Captain Seymour, who was a particularly keen critic, condemned her roundly for her poor subdivision, her unprotected machinery and steering gear and, more than anything else, the unhandiness caused by her great length and single screw which, in his opinion and that of most other naval officers of the time, was a fatal handicap for a cruiser. The whole episode was a very expensive lesson, but it was a very badly needed one and it is satisfactory to note that it was fully appreciated by the authorities. It was decided that auxiliary cruisers would inevitably be necessary to the Fleet in war-time, but that a proper organization beforehand was essential in order that they might be efficient and commissioned without delay or undue expense. It was also realised that not every mail ship, even if she were a record-breaker and her name was a household word, would make an efficient naval

auxiliary unless her ordinary commercial design were appreciably modified. As the Atlantic mail contracts with the Cunard and White Star Lines were due for revision, there was a good opportunity to effect the improvements, and it was decided to use mail contracts all over the world to cover the auxiliary cruiser organization. New ships built under these contracts were to be suitable for naval use, adequate payment being made to compensate for the expense and inconvenience of their special features. As to the adequacy of the payment, there was room for two opinions, but the shipowners co-operated loyally.

The changed policy resulted in the construction of larger and faster liners by various companies on the Western Ocean and the more distant routes, according to Admiralty ideas of the most suitable design, and although actual war experience in 1914 proved that naval ideas on auxiliary cruisers, abroad as well as at home, were often faulty, there is no doubt that the lessons learned in 1885 had much to do with the fine part played by the armed merchant cruisers in the defeat of Germany.

A SCHOOL OF SHIP HANDLING

By Lieutenant-Commander W. F. H. C. Rutherford, R.N.

IT is often stated, not without reason, that in these days when naval officers are so largely occupied with technical machinery and instruments of increasing complexity, there is a strong tendency for the study and practice of seamanship to take a back seat. In the smaller ships this is not the case, as all officers have a very definite responsibility in the handling of the vessel. In a big ship, however, with its masses of fighting material to be maintained and with the ever changing personnel to be trained in its use, the evil has a chance to grow.

Some officers are inevitably a little out of touch with matters directly affecting the movement of the ship, and specialists are daily faced with the need to give more and more of their time to the direction of their departments to the growing exclusion of more general duties. But, if we accept the fact that the pursuit of efficiency in the face of difficulties inherent in a rapidly expanding Fleet may tend to cause some to lose sight of the wood for their own particular trees, it is not a matter for the wringing of hands but for the search for a remedy. This remedy must be neither complicated nor expensive and should be readily available. The following scheme was thought out in a passenger ship in the Pacific where the practice of seamanship could be observed without distraction.

Nowadays it is quite possible for an officer to go from his fast motor boat to his first command in a destroyer, sloop or even a cruiser without any intervening stage at which he can refresh his practical ability to handle vessels at sea. Although the principle of naval training, i.e., ready adaptability, has proved generally successful (e.g., the recent naval armoured trains in Palestine), it is felt that the value of refresher courses would be inestimable. This applies particularly to the many officers who do not have the benefit of early commands such as destroyers, submarines, and motor torpedo boats.

It is believed that it is the practice in the Royal Italian Navy to maintain a division of small and elderly destroyers for training young officers in command and exercising them in handling their own ships, the underlying principle being to encourage enterprise by accepting bumps as the price of experience.[1]

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[1] Some details of this system of training in the Italian Navy were given in Navy Notes of the Journal for November, 1934, p. 840. According to a later report, however, this School has been suspended—possibly in order to economize fuel.—Editor.

It is suggested that a School of Ship Handling would be of great service in our Navy. It might be run under the direction of the Navigation School and consist of one old destroyer, and one old sloop. It might also be provided with two buoys for securing purposes, and a jetty of solid but pliable construction like those of the Sydney Harbour Ferry Services. The two ships should be fitted with big rubbing strakes.

The course would at first consist of simple weighing and anchoring, securing to a buoy or buoys, picking up boats or dummy torpedoes, going alongside and leaving the jetty. Later, exercises might be made more difficult by the introducton of artificial obstructions, such as projecting beams from the jetty—the ship to be placed between two of them without much room to spare. As in the Italian Navy, bumps would be accepted and paid for as the price of increased efficiency.

The course would be taken, firstly, by all officers about to be given a first command, and then by as many other officers as possible at odd times, such as a few spare weeks between appointments. Specialist officers would do the course if possible before appointment to a school or after a period ashore. Destroyer officers are already given short technical courses to help them in their duties. It would seem only logical that the same system should apply to the handling of ships.

The course might also be made to include training in cable work and other duties on the forecastle or aft, and to work in conjunction with the harbour training services.

The expense of such a School would scarcely be noticed in these days of vast expenditure and it would be amply repaid by keeping fully alive in every officer skill in ship handling and by the greater confidence it would give to those taking up their first commands.

MEETING OF REGIMENTAL REPRESENTATIVES ON THE OLD UNIFORMS COMMITTEE

On Friday, 13th January, 1939, at 3.30 p.m.

MAJOR-GENERAL J. R. M. MINSHULL-FORD, C.B., D.S.O., M.C., in the Chair.

THE CHAIRMAN'S ADDRESS

BEFORE I deal with the object of this meeting I must explain that I have been asked to deputise for General Sir Robert Whigham, who is unfortunately laid up with a severe chill.

For the benefit of those who were not present at any of our previous meetings, I think it might be well if I briefly restated the object which the Council of this Institution had in mind when they initiated the project which we are here to discuss. That object is to compile a Summary—a register, if you like—of all available evidence about Uniforms of the past and present (because the present will soon become the past), of the Equipment, and of the Standards and Colours of the Army. The Summary will not give you detailed information supported by evidence in full—that would be too vast an undertaking and would necessitate a library of its own—but it will tell you where to go for the information and evidence ; it will tell you on what page of what book they are to be found, and where a copy of the book may be seen ; it will tell you where there are any specimens of uniforms or equipment, and where surviving colours or standards are preserved—in our Museum here, in regimental museums, in private hands, or, in the case of the latter, in cathedrals, churches, or other buildings. The same applies to any paintings or portraits which may cast light on the military apparel of our predecessors.

Now, as to the progress of the Summary : we have so far got the records of thirteen regiments into volume form ; the volumes are here for your inspection. They are striking evidence of Captain Anderson's assiduous labours. There are sixteen of them : four are for one regiment alone—the Black Watch. That we have been able to record so much evidence for one regiment—battalion rather, for these volumes deal with the 42nd only—is largely the result of the splendid work of research put in by Colonel R. F. H. Wallace, the regiment's Representative. Although

so much has been put on record for this battalion, it must not be thought that that part of the work is completed. This is a task which from its nature can never be really completed, for new facts about the past are continually coming to light and the volumes must be kept up to date if they are to be of full value to those who will come after us.

Another regiment which is now being put into volume shape is the Gloucestershire Regiment. Roughly, our order of preference in dealing with regiments is decided by the relative degree of enthusiasm shown by their Representatives. In the case of the Gloucesters we have received invaluable help from Lieut.-Colonel R. M. Grazebrook, now commanding the 1st Battalion. He has made a life's study of the uniforms of his regiment, and has forwarded to us the results of his labours. Perhaps his most useful contributions are extracts from unpublished manuscript order books, letter books and the like in possession of the regiment. It is to supplying us with copies of extracts from such regimental order books, digests of services, and any other surviving paper records that we hope Regimental Representatives will first devote themselves. These records are very perishable, and it is most desirable that legible copies should be preserved in permanent safe-keeping before the originals are lost or mutilated.

Let me give you a few examples of how the work is actually being furthered by the collaboration of the Regimental Representatives and by other individual research. The first relates to the matter of the Royal Horse Artillery jacket, and the reason why that is the only corps of the Regular Army which still wears substantially the same full-dress uniform as it did in the Peninsula, at Waterloo and in the Crimea. Knowing the great interest which is taken here in regimental uniforms, Major-General Sir John Headlam wrote giving his recollection of how it came about that the Royal Horse Artillery was not forced into the hated tunic at the end of the Crimea as was the rest of the Army. It will be simplest if I quote part of General Headlam's letter. He was dining as a subaltern in the Mess at Woolwich, and it was an old officer sitting next to him who gave him the facts. "He then went on to explain," General Headlam writes, "how it was that the Horse Artillery escaped the fate of the Hussars in having their jackets turned into tunics. This he ascribed to the cunning of the D.A.G., R.A., at the time, who pointed out that in a tunic the gunners would not be able to 'loop swords' as the hook on their sword-belts would be under the tunic. At that time, and up to 1899, the sword was carried on the person, and not on the saddle, and before going into action the order was always given, 'Off gloves, loop swords.' On this the gunners took off their gloves, hung them on the hook on their sword-belts, and then looped up their swords on the same hook by the top ring on the scabbard."

Those were the words of the old gentleman. We can feel grateful to this officer for saving the old Royal Horse Artillery jacket by such a pretty piece of fallacious argument.

The other example I will give you relates to the original orders for the dress of the six independent Highland companies which were raised in 1725, and eventually amalgamated to form The Black Watch (Royal Highland Regiment). This order was issued by General George Wade, Commander-in-Chief in Scotland at the time. The original manuscript is preserved in the British Museum, but it had escaped the attention of military antiquarians until we started our work on the records of The Black Watch. We got a clue to its existence from a manuscript chronology of the regiment preserved in the Library here. The rest was merely a matter of assiduous searching in the British Museum manuscript room. One curious item in General Wade's order is a mention of badges which were numbered differently for each man in the companies, presumably somewhat in the manner of Metropolitan policemen of to-day who have different numbers on their collars. We have not yet discovered what form this badge took nor what material it was made of. No doubt that point will be cleared up in time. Perhaps one of you may be able to suggest some answer to the riddle.

An article on this discovery of ours is due to appear in the Spring number of the *Journal of the Society for Army Historical Research*. This is a Society which I can recommend to anyone interested in the history and details of uniforms. One very useful feature of their Journal is the section devoted to questions and answers, and numerous doubtful points have been cleared up through its columns.

Another gratifying thing about the work we are doing is that it is really being made use of. For instance, some of you will remember a broadcast a few months ago on the Grenadier Guards. We were asked by the officer responsible for collecting the material if we could assist, and we were able to supply him from our records with little known material which might otherwise have escaped his notice. On another occasion, a television broadcast about Army uniforms was given. For composing this broadcast also facts were taken from our records, and permission was given for some rare exhibits in the Museum to be shown.

Then, again, the officers of an Indian regiment wished to present their Mess with a pair of oil paintings of their regiment in action, one in 1857, the other in 1917. We were able to help the artist in getting the uniforms and weapons of those periods right. It is a curious fact that it was easier to supply the details of 1857 than of 1917, which shows the importance of keeping our registers well up to date and of not imagining that, because an event occurred within living memory, there is no need to make a record of

it. Film companies are also beginning to make use of our services to get details in historical films correct, which is all to the good from the point of view of educating the public.

The Census of Colours, as we call it, is being compiled side by side with the Uniforms Summary. The idea is to have a coloured sketch or photograph and written details of every British military colour and standard known to exist, with a record of where it is preserved. Some units have co-operated so enthusiastically in this undertaking that their Census is practically complete. Other regiments, perhaps because the Census has not come to their notice, have done little as yet. We have suitable cards ready printed which any of you who know of colours that are not likely to have come to our notice might very kindly take away to fill in.

Mention was made in the JOURNAL of August last, that as a result of the Council's enquiries, it had been ascertained that practically all regiments of the Indian Army desired to be associated with this scheme. Since then the majority of them have appointed Regimental Representatives who are beginning to help us to build up their records.

The valuable collection of uniforms and other objects of interest received from the Wellcome Historical Medical Museum has now been sorted, and we are prepared to pass on a certain number of articles from it to regimental museums. There will be an opportunity for any of you who wish to do so to look them over after the meeting and see if you think any of them are of sufficient value or interest to bring to the notice of the regiments concerned.

Amongst the more important additions to our own collection which we have received in the course of the past year are :—

10th Hussars, 1846. Full-dress jacket, waistcoat, cross-belt, pouch, sabretache and shabraque. Formerly owned by Colonel John Vandeleur. Also his Waterloo medal and Peninsular medal with five clasps.

Pouch of the Light Cavalry of the British-German Legion, 1854. Given by the Marquess of Cambridge.

Officer's coat of the Royal Artillery in Ireland, 1790.

Full-dress uniform of the Montgomeryshire Yeomanry Cavalry, 1880.

Water bottle of the Royal Westminster Regiment of Volunteers, 1803.

I would invite you to inspect some fine examples of uniforms and head-dresses which have been selected from our large stock and which you now see in this theatre.

It was decided at our first meeting in October, 1937, that this should be an annual gathering, and the fact that we are here to-day is evidence of the Council's intention to give effect to this resolution and of their continued interest in an aspect of the Institution's activities which is as old as itself.

We owe a great debt of gratitude to Captain Dean for his invaluable services as Honorary Secretary to the Committee since it was first formed over three years ago. He has just been succeeded by Mr. Clendenin, late of the Gordon Highlanders, who is himself an enthusiastic expert on uniforms, more especially of the Scottish Regiments.

I have been asked to say that if any one should see a picture or other object of special military interest at Christie's, or any other sale room, we should be glad if they would communicate with the Secretary here, because we might then be able to obtain a photograph of the article before it is sold or lost sight of. Some portraits are extraordinarily interesting because of the details of the uniforms which are not, perhaps, to be obtained elsewhere. When we can procure such photographs we shall be pleased to present copies to the regiment particularly concerned.

I hope that some of the Regimental Representatives will now give us the benefit of their views and experiences. This is primarily your meeting and it is through you that the Institution hopes to keep in touch with the Army in these matters which so closely affect the history and traditions of our Service.

DISCUSSION.

CAPTAIN H. OAKES-JONES: When the Chairman spoke about records of regiments—manuscripts and orders—undoubtedly there is much which has been lost or destroyed. It would be a great help to us if regiments would detail an officer to make notes from any records which can be found of anything relating to alterations of dress and equipment and the dates when such records were issued. The notes should be entered in regimental records and copies sent here. It is an amazing thing how, even in our own time, people are apt to lose sight of the value of such records for the future. Details with regard to shoulder straps, for example, may be remembered, but the dates when such changes were introduced is not usually known; no one kept a record, and the War Office, except perhaps for officers' uniform, have not kept records.

The most important thing to bear in mind is the value of any orders relating to change of uniform prior to 1822, because it was not till then that the first official printed dress regulations for officers uniform were issued.

The first official warrant of clothing appeared in 1751, and with it came into existence a uniformity of uniform which confirmed the uniformity which had commenced about 1740. Prior to that, there was an enormous variety of differences

in the various regiments, with the result that there is often much confusion when historical records are compiled, the author or artist jumping to the conclusion that because the authentic details of uniform of some individual regiment are known by an order or contemporary description or painting, that therefore the regiment he is dealing with must have been the same, except perhaps the colour of the facings. This is a mistake which must be avoided if possible ; a clear statement should be given that the details of uniform are not known but, "we assume that it may have been, or probably was, of such a type, and now give the description or drawing required." Even as recently as 1914, regimental orders and regulations dealing with changes in uniform, equipment, etc., have been mislaid, together with diaries and other matter relating to uniforms, and if the information can be traced and notes made and sent in to the Secretary it will be a great help to us and will be useful not only to your own regiment but to other regiments also.

All details are useful ; for instance I do not think there is a single regiment which can give a full list of the badges, markings and patch distinctions (other than Divisional signs) which were adopted unofficially from time to time in the service battalions from the days of their formation—when shoulder straps, numbers and non-regimental badges, were altered and the strange markings and peculiarities introduced by the Colonels and Brigade Commanders.

In the amalgamation of Cavalry Regiments, some interesting points arise. In the case of the Life Guards, where the 1st and 2nd have amalgamated, changes have taken place which are known to the accoutrement makers but of which there is no clear record, where some peculiarities of each regiment have been adapted or combined. There is, for example, the amalgamation of the ornamentation details of the sword and scabbard.[1]

MAJOR A. G. C. FANE : With regard to the Indian Army, I understand that pictures of uniforms are wanted. Are old bits of uniform—caps, for instance—of pre-war days when pretty colours were worn, also wanted ?

THE CHAIRMAN : Certainly, we would like to have them.

BRIGADIER-GENERAL C. BURNETT : Do you want to know about such matters as the year in which the Lewis gun came to Mesopotamia, and so forth ?

THE CHAIRMAN : That will be very interesting.

A MEMBER : In amalgamated cavalry regiments, do you wish the duty of collecting information undertaken by one officer ? There may be a little difficulty as to who is to undertake the combined job.

THE CHAIRMAN : I think that rather applies to line regiments, too. It will be for the Lieutenant-Colonel commanding to decide as to who shall undertake the duty ; otherwise, there might be too many Representatives engaged upon the work.

The Meeting then dispersed to inspect the display of old uniforms, head-dresses, etc., specially arranged in the theatre, and to examine the volumes of the Summary which are in the course of compilation.

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[1] This is a case where the value of the Institution's Summary can be shown. In it there is a record of a manuscript entitled "Decision of a Board of Officers held at Regent's Park Barracks for Amalgamating the uniforms of the Regiment." The original is preserved in the regimental orderly room of the Life Guards, and a copy has been supplied to us by the Representative of that regiment.—EDITOR.

REGIMENTAL REPRESENTATIVES ON THE UNIFORMS COMMITTEE

Regiment	*Representative*
The Life Guards	Major R. E. S. Gooch
Royal Horse Guards	Lieutenant E. A. H. Legge-Bourke
1st King's Dragoon Guards	Major F. H. Charlton
The Queen's Bays	Major G. H. Fanshawe
3rd Carabiniers, *for 3rd Dragoon Guards*	President, Mess Committee
for 6th Dragoon Guards	Captain V. H. Barnard, M.C.
4th/7th Royal Dragoon Guards	Captain R. G. Lawrence
5th Royal Inniskilling Dragoon Guards	Lieut.-Colonel G. E. N. Booker, C.B.E.
The Royal Scots Greys	Lieut.-Colonel G. F. A. Pigot-Moodie, M.C.
3rd The King's Own Hussars	President, Regimental Institutes
7th Queen's Own Hussars	Captain G. Scott
8th King's Royal Irish Hussars	Major T. G. Watson
9th Queen's Royal Lancers	Commanding Officer
10th Royal Hussars	Major G. E. Gosling, M.C.
12th Royal Lancers	Lieut.-Colonel H. Lumsden, M.C.
13th/18th Royal Hussars, *for 13th Hussars*	Brig.-General A. Symons, C.M.G.
for 18th Hussars	Brig.-General C. K. Burnett, C.B., C.M.G.
14th/20th King's Hussars	Brig.-General J. Gilbert Browne, C.M.G., C.B.E., D.S.O.
15th/19th The King's Royal Hussars	The Right Hon. Lord Carnock, M.C.
17th/21st Lancers	Major M. G. Micholls
The Duke of Lancaster's Own Yeomanry	Major R. F. Fleetwood-Hesketh
The Leicestershire Yeomanry	Colonel G. C. Codrington, C.B., D.S.O.
Royal Artillery	Secretary, R.A. Institution
Royal Engineers	Lieut.-Colonel E. V. Binney, D.S.O.
Royal Corps of Signals	Major H. W. Hose
Grenadier Guards	Regimental Adjutant
Coldstream Guards	Regimental Adjutant
Scots Guards	Superintending Clerk F. Morley
Welsh Guards	Regimental Adjutant
The Royal Scots	Colonel H. J. Simson, M.C.
The Queen's Royal Regiment	Commanding Officer, Depot
The Buffs	Captain C. R. B. Knight
The King's Own Royal Regiment	Lieut.-Colonel L. I. Cowper, O.B.E.
The Royal Northumberland Fusiliers	Brig.-General C. Yatman, C.M.G., D.S.O.
The Royal Warwickshire Regiment	Major J. S. Knyvett

Regiment	*Representative*
The Royal Fusiliers	Captain H. Oakes-Jones, M.B.E., F.S.A.
The King's Regiment	Lieutenant V. M. E. Bateson
The Royal Norfolk Regiment ..	Brig.-General P. V. P. Stone, C.M.G., D.S.O.
The Lincolnshire Regiment ..	Commanding Officer, Depot
The Devonshire Regiment	P. S. Leeper, Esq.
The Suffolk Regiment	Major H. B. Monier-Williams, M.C.
The Somerset Light Infantry ..	Major-General Sir Henry Everett, K.C.M.G.
The East Yorkshire Regiment ..	Lieutenant R. G. Oliver
The Leicestershire Regiment ..	Commanding Officer, Depot
The Green Howards	Captain T. F. J. Collins
The Royal Scots Fusiliers	Commanding Officer, Depot
The Cheshire Regiment	Colonel A. Crookenden, D.S.O.
The Royal Welch Fusiliers	Major M. B. Dowse
The South Wales Borderers ..	Colonel R. F. Gross, D.S.O.
The King's Own Scottish Borderers	Commanding Officer, Depot
The Cameronians	Officer i/c Regimental Property and Relics Fund
The Royal Inniskilling Fusiliers ..	Major E. E. J. Moore
The Gloucestershire Regiment ..	Lieut.-Colonel R. M. Grazebrook, O.B.E., M.C.
The Worcestershire Regiment ..	Commanding Officer, Depot
The East Lancashire Regiment ..	Commanding Officer, Depot
The East Surrey Regiment ..	Major H. H. Stacke, O.B.E.
The Duke of Cornwall's Light Infantry	Lieut.-Colonel A. W. Stericker, D.S.O.
The Duke of Wellington's Regiment	Lieut.-Colonel R. M. Tidmarsh
The Border Regiment ..	Lieut.-Colonel P. J. Shears
The Royal Sussex Regiment ..	Commanding Officer, Depot
The Hampshire Regiment	Colonel H. W. Man, C.B.E., D.S.O.
The South Staffordshire Regiment ..	Lieut.-Colonel M. B. Savage, C.B.E., D.S.O.
The Dorsetshire Regiment	Captain O. G. W. White
The South Lancashire Regiment ..	Commanding Officer, Depot
The Welch Regiment	Major A. C. Whitehorne, O.B.E.
The Black Watch	Colonel R. F. H. Wallace, C.M.G.
The Oxfordshire and Buckinghamshire Light Infantry	Officer i/c Regimental Museum
The Essex Regiment	Commanding Officer, Depot
The Loyal Regiment	Major A. R. Barem, D.S.O., M.C.
The Northamptonshire Regiment ..	Commanding Officer, Depot
The Royal Berkshire Regiment ..	Commanding Officer, Depot
The Royal Marines	Captain I. S. Hicks
The Queen's Own Royal West Kent Regiment	Captain H. M. Edwards

Regiment	*Representative*
The King's Own Yorkshire Light Infantry	Major C. Huxley
The King's Shropshire Light Infantry	Major N. M. Hughes-Hallett
The King's Royal Rifle Corps ..	Chairman, Historical Sub Committee
The Wiltshire Regiment ..	Commanding Officer, Depot
The Manchester Regiment	Captain T. B. L. Churchill, M.C.
The North Staffordshire Regiment ..	Major E. D. B. Oxley, M.C.
The York and Lancaster Regiment ..	Commanding Officer, Depot
The Durham Light Infantry ..	Captain G. S. Fillingham, M.C.
The Highland Light Infantry ..	Lieut.-Colonel A. N. E. Browne
The Gordon Highlanders	Major V. A. H. D. Denne
The Royal Ulster Rifles	Officer i/c Museum
The Royal Irish Fusiliers	Major G. W. R. Templar, D.S.O.
The Argyll and Sutherland Highlanders	Brig-General A. E. J. Cavendish, C.M.G.
Royal Army Service Corps	Major C. H. Massé, M.C. Major W. H. D. Ritchie
Royal Army Medical Corps ..	Lieut.-Colonel J. Y. Foster, O.B.E.
Royal Army Ordnance Corps ..	Lieut.-Colonel A. M. Hidden

INDIAN ARMY

Regiment	*Representative*
Governor-General's Body-Guard ..	The Commandant
Governor's Body-Guard, Madras ..	The Commandant
Governor's Body-Guard, Bengal ..	The Commandant
Skinner's Horse	
1st Duke of York's Own Lancers	Lieut.-Colonel G. A. C. Wetherall
3rd Skinner's Horse	Lieut.-Colonel G. C. G. Gray
2nd Royal Lancers	
2nd Lancers	Colonel D. E. Whitworth, M.C.
4th Cavalry	Brigadier R. Johnston, D.S.O., O.B.E.
Probyn's Horse	
11th King Edward's Own Lancers	Lieut.-Colonel R. A. Anderson
12th Cavalry	Colonel H. T. Shakespear
6th Duke of Connaught's Own Lancers	
13th Duke of Connaught's Lancers	Major L. P. Haviland
16th Cavalry	Lieut.-Colonel W. H. Lang
7th Light Cavalry	Major G. Uloth
8th King George's Own Light Cavalry	
26th King George's Own Light Cavalry	Lieut.-Colonel A. G. Armstrong

Regiment	*Representative*
The Guides Cavalry	Brigadier Hector Campbell, C.B., D.S.O. M.V.O., and Major W. J. C. Duncan, D.S.O., M.C.
Sam Browne's Cavalry	
22nd Sam Browne's Cavalry (F.F.)	Major L. L. Thwaytes
25th Cavalry (F.F.)	Colonel M. I. E. Palmer, C.M.G.
13th Duke of Connaught's Own Lancers	Lieut.-Colonel E. J. P. T. Walker, M.V.O., O.B.E.
The Scinde Horse	
35th Scinde Horse	Lieut.-Colonel B. MacM. Mahon, D.S.O., M.C.
15th Lancers	
17th Cavalry	Colonel H. S. Stewart and Major S. H. Persse
37th Lancers	Lieut.-Colonel W. C. N. Lee and Lieut.-Colonel A. L. B. Anderson
16th Light Cavalry	Major W. Dixon
The Poona Horse	
34th Prince Albert Victor's Own Poona Horse	Colonel W. G. Elphinstone, M.C.
18th King Edward VII's Own Cavalry	
6th King Edward's Own Cavalry	Lieut.-Colonel L. Lawrence-Smith
7th Hariana Lancers	Colonel J. K. Tod, C.M.G.
20th Lancers	
14th Murray's Jat Lancers ..	Captain P. C. Bullock
15th Lancers	Lieut.-Colonel K. D. Barbour
The Central India Horse	Lieut.-Colonel A. Hewlett
Queen Victoria's Own Madras Sappers and Miners	The Superintendent of Instruction
King George's Own Bengal Sappers and Miners	The Corps Adjutant
Royal Bombay Sappers and Miners	Lieut.-Colonel E. V. Binney, D.S.O.
1st Punjab Regiment	
76th Punjabis	Colonel S. Van B. Laing, C.I.E., D.S.O., M.C.
82nd Punjabis	Lieut.-Colonel A. J. Lunn, M.C.
84th Punjabis	Lieut.-Colonel H. W. Hickie, D.S.O.
2nd Punjab Regiment	Colonel T. C. Caty, C.M.G., D.S.O.
4th Bombay Grenadiers	
The 101st Grenadiers	Brig.-General R. M. Betham, C.I.E.
102nd King Edward's Own Grenadiers	The Quartermaster

Regiment	*Representative*
6th Rajputana Rifles	Lieut.-Colonel B. G. B. Kidd, D.S.O.
7th Rajput Regiment	
8th Rajputs	Lieut.-Colonel F. R. Cosens
11th Rajputs	Lieut.-Colonel P. D. C. Johnston
16th Rajputs	Lieut.-Colonel F. R. Cosens
9th Jat Regiment	
6th Royal Jat Light Infantry ..	Lieut.-Colonel W. L. Hailes, M.C.
11 9th Infantry	Lieut.-Colonel M. Eccles, M.C.
10th Baluch Regiment	
124th Duchess of Connaught's Own Baluchistan Infantry	Major J. W. Lord, M.C.
126th Baluchistan Infantry ..	Lieut.-Colonel H. R. Briggs
129th Duke of Connaught's Own Baluchis	Lieut.-Colonel C. C. Crick, O.B.E.
2nd/124th Duchess of Connaught's Own Baluchistan Infantry	The Commandant
11th Sikh Regiment	
47th Duke of Connaught's Own Sikhs	The Commandant
35th Sikhs	The Adjutant
12th Frontier Force Regiment	
52nd Sikhs (F.F.)	Colonel W. M. Grylls
54th Sikhs (F.F.)	Brigadier S. R. Shirley, M.C.
Queen Victoria's Own Corps of Guides (F.F.)	Brigadier Hector Campbell, C.B., D.S.O., M.V.O., and Major W. J. C. Duncan, D.S.O., M.C.
13th Frontier Force Rifles	
55th Coke's Rifles (F.F.) ..	Colonel T. Milne
2nd/56th Punjabi Rifles (F.F.) ..	Colonel A. H. Burn, C.I.E., O.B.E.
14th Punjab Regiment	
19th Punjabis	Colonel D. B. Ross, C.S.I., O.B.E.
20th Duke of Cambridge's Own Infantry	The Commandant
22nd Punjabis	Lieut.-Colonel C. C. R. Murphy, D.S.O.
24th Punjabis	The Commandant
40th Pathans	Major R. S. Waters, O.B.E.
21st Punjabis	Lieut.-Colonel P. Murray
15th Punjab Regiment	
25th Punjabis	Lieut.-Colonel J. E. Shearer, M.C.
26th Punjabis	Lieut.-Colonel J. O. Turnbull, D.S.O.
28th Punjabis	Lieut.-Colonel J. C. Phillips
29th Punjabis	Lieut.-Colonel G. N. Bignell, M.C.

Regiment	*Representative*
16th Punjab Regiment	
30*th Punjabis*	Lieut.-Colonel C. C. R. Murphy, D.S.O.
31*st Punjabis*	Lieut.-Colonel B. K. Dymott
33*rd Punjabis*	Major N. C. Jackson
46*th Punjabis*	Lieut.-Colonel R. D. Beadle
17th Dogra Regiment	
37*th* (*The Prince of Wales's Own*) *Dogras*	Major A. G. C. Fane, M.C.
38*th Dogras*	Lieut.-Colonel Cunningham, M.C.
41*st Dogras*	The Commandant
2*nd*/41*st Dogras*	Major A. G. C. Fane, M.C.
18th Royal Garhwal Rifles	Lieut.-Colonel E. R. P. Berryman, D.S.O.
19th Hyderabad Regiment	
94*th Russell's Infantry*	Lieut.-Colonel J. P. Mitford, D.S.O.
95*th Russell's Infantry*	Lieut.-Colonel H. Bullock
2nd King Edward VII's Own Gurkha Rifles	Major W. B. Shakespear
3rd Queen Alexandra's Own Gurkha Rifles	Lieut.-Colonel A. G. Stone, O.B.E., M.C.
6th Gurkha Rifles	Major H. R. K. Gibbs
9th Gurkha Rifles	Lieut.-Colonel F. S. Poynder, D.S.O., M.V.O., O.B.E., M.C.
10th Gurkha Rifles	Lieut.-Colonel B. R. Mullaly
Royal Indian Army Service Corps ..	Brigadier I. M. Conway Poole, D.S.O.
COLONIAL FORCE	
The Sierra Leone Battalion, Royal West African Frontier Force	Captain D. H. Andrews

THE JAPANESE CAMPAIGN IN CHINA

By Peter Fleming

On Wednesday, 25th January, 1939

Admiral Sir C. J. Little, K.C.B., in the Chair

The Chairman, on introducing the Lecturer, said that he knew that this was going to be a most interesting talk on a subject for which all British people have a sort of natural fascination; he did not refer to the campaign particularly but to China and Japan.

Mr. Fleming, he was sure, needed no introduction; he was already a well known personality as a traveller and a journalist. His considerable experiences well qualified him for the task he had been kind enough to undertake that afternoon.

LECTURE[1]

THE undeclared war in China has now been going on for over a year and a half. It began, you will remember, on the night of 7th July, 1937. Japan, by virtue of treaty rights which she shares with ourselves and other Powers, maintains a garrison in North China. During the last few years her garrison has been a good deal larger than any of the others. Part of this garrison, while carrying out night manœuvres on the outskirts of Peking, came into conflict with a Chinese garrison, most of which appears to have been asleep in its barracks at the time. There was a little shooting, but nobody seems to have been hurt. Nevertheless, within a few days Japan was accusing China of "insincerity" and the fat was in the fire.

Of the "Lukouchiao incident," as it came to be called, only two things are certain: one, that it was completely trivial, the other that if it was not engineered it was exploited to the full by certain influential—I will not say responsible—elements in Japan's armed forces.

All through the rest of July and into the beginning of August the tension between Tokyo and Nanking waxed and waned; but it generally waxed rather more than it waned, and there was a good deal of local fighting in the plains round Peking and Tientsin. At the same time, all through this preliminary period of about six weeks, the prospect of a peaceful settlement was never out of sight. The dilemma before General

[1] This Lecture was illustrated by a number of excellent lantern slides.

Chiang Kai-Shek was a cruel one. The Chinese did not want war; they were not ready for war and they knew they did not stand a chance of winning a war. They had to choose between following the path of "appeasement" (which meant handing over on Japan's terms certain important areas in North China) and resisting by force a threat of force.

At last the Generalissimo made his choice; he decided to resist by force. I think it is important to remember that this was a solemn decision. It was not a wild gesture and it was not a rash move based on an optimistic estimate of China's military strength. China went into the war with a very definite purpose, which she still has before her. That purpose was to get the Japanese out of China. She had not then one chance in a thousand of repelling an invasion which was already well under way in the North. When she went to war she hoped and believed, and I think she still believes, that in the long run she could outlast and thereby ruin or otherwise bring about the downfall of Japan.

The Generalissimo's first stroke was brilliant. Hitherto the fighting had all been in the North; but when he finally decided on war he moved two divisions in the second week of August up to the outskirts of Shanghai. This threatened the Japanese community in the International Settlement, which at that time was protected by a very small garrison. The threat brought the Japanese Navy into the Whangpoo and committed the Japanese to an entirely new theatre of war in Central China. The creation of this theatre of war had, at the outset, two advantages for China, one of which was problematical and the other certain. The first, the problematical one, was the possibility that Japan might get seriously embroiled with the Foreign Powers at Shanghai. This possibility failed to materialise, although not through any fault of Japan; she played up very well on the whole, confiscating foreign property, sinking an American gunboat and machine-gunning the British Ambassador; but none of the Powers concerned took any effective action. The British Government, on learning that Sir Hugh Knatchbull-Hugessen had been successfully attacked from the air, sent what a contemporary Cabinet Minister might describe as a remorseless note to Tokyo, pointing out, as far as I recall, that it was extremely reprehensible to machine-gun civilians in any circumstances, whether or not they happened to be the personal representatives of His Majesty The King. This was a good debating point; but Japan was not engaged in a debate.

The other advantage gained by drawing the Japanese in at Shanghai was that it committed them to a major military effort in a theatre which was at that time quite irrelevant to their main political and economic objectives. It made it impossible for Japan to enjoy a short, inexpensive and successful military adventure in the North, which without seriously

taxing her resources would have left her with all she wanted in the way of raw materials, all she wanted in the way of a strategical position along the flank of Outer Mongolia, and all she wanted in the way of a springboard for further conquests of Chinese territory. Moreover, the opening stages of the Shanghai fighting went unexpectedly well for the Chinese. The terrain was difficult for the invaders, being much broken by waterways; and this deprived the Japanese of the mobility which they had enjoyed in the North. The Chinese Armies hung on for about three months,a very creditable performance which did a lot for their prestige abroad and even more for their prestige in China. For the first time the Japanese were given some reason to suppose that it was not going to be a picnic.

The Chinese resistance at Shanghai collapsed in an entirely characteristic way. The division which had been detailed to watch the shores of Hangchow Bay relaxed its vigilance, and the Japanese put ashore a force—it should have been a very difficult landing indeed—which turned the flank of the Chinese. As usual the latter withdrew in surprisingly good order, but again, as they have almost always done, once they began to withdraw they never quite got co-ordinated again and the Japanese went right ahead.

Nanking, the capital, fell in December, and for the first, and so far last time peace was in sight. Chinese morale was very low indeed, and negotiations for peace were actually being carried on through Dr. Trautmann, the German Ambassador. It is interesting to note that Japan's terms were then, on paper at any rate, very much the same as they are now after a year's successful campaigning. These terms were rejected, and a good many observers will tell you, with some degree of plausibility, that Japan lost the war when she failed to negotiate or dictate a peace at Nanking.

The capture of Nanking was accompanied by certain excesses against the civilian population,; these were remarkable not only for their barbarity but for the fact that they went on for at least three weeks before any attempt was made to restore discipline. Thereafter, interest shifted from the Yangtse Valley up to the northern front. Here, at first, the Japanese had everything their own way; but in March it became clear that they were seriously held up North of Hsuchow. They were coming down the Tientsin-Pukow Railway and the Peking-Hankow Railway; and they had also made a daring and successful expedition into the mountainous country of Shansi. But at the end of March the Chinese had their only important victory at a little place called Taierchwang, North of Hsuchow on the Lunghai Railway.

The Japanese broke through in the middle of May and captured Hsuchow. By the end of May they had made good about 200 miles of the

Lunghai Railway, almost as far West as Chengchow. Chengchow itself was about to fall when the Chinese, acting on the instance of their German advisers (who were then in the course of being recalled by the Fuehrer) cut the dykes of the Yellow River between Chengchow and Kaifeng, releasing floods which drowned, I think, about 5,000 Chinese and caught quite a large number of Japanese mechanised units. Those floods were an effective stroke of strategy. The breaching of the dykes meant that the Japanese had to divert their main military effort back to the Yangtse. The Yangtse offered a line of communication which could under no circumstances be cut, and up it an amphibious force worked steadily towards Hankow. The Matung Boom, below Kiukiang, was forced more easily than it should have been and Kiukiang was occupied without much difficulty. After that, progress on both banks of the river—they were operating on both the North and South banks—was slow but reasonably steady. The Chinese in the meantime had withdrawn their capital to Chungking, several hundred miles further up the Yangtse.

Meanwhile, the Japanese were getting on towards Hankow, and in October, as you remember, a force of between two and three Japanese divisions was landed at Bias Bay in South China, near the borders of Hong Kong, and meeting with little or no resistance walked into Canton a fortnight later, thus cutting China's last important maritime link with the outside world. Five days later the Japanese advance guard reached Hankow, from which the Chinese had retreated in reasonably good order. Since then there have been very few military developments in the situation, but one or two political ones are worth mentioning. There has been a tardy decision by the British and American Governments to extend certain credits to China. The moral effect of these credits on Tokyo may one day prove to have been of considerable importance. Another political development has been the formulation by Japan of the terms on which she is prepared to make peace. You all know the details as published; they concentrate mostly on North China and Inner Mongolia, on the Anti-Comintern Pact and on the stationing of Japanese garrisons in Chinese territory at points which were not specified, for a period which was also not specified. The interesting thing about them now appears to be their relative moderation; they are not very much stiffer than the terms which the Japanese were putting forward a year ago. Their moderation, such as it is, strikes one as vindicating the Chinese long-term policy of resistance. It looks as though the total results of a year's successful but expensive campaigning have not been particularly satisfactory from the long-term point of view of the Japanese.

The foregoing observations have given you a brief and superficial, but I think a generally accurate, summary of the progress of the war up to

date. The situation is roughly this: Japan has beaten China, on paper. China, theoretically, took the count three months ago when Canton and Hankow fell within five days of each other. Japan now controls all the ports that matter; Japan controls all the railways that matter; Japan has destroyed virtually all the modern industries in China; Japan has occupied or devastated most of the richest agricultural land in China; Japan controls a majority of the developed mineral resources of China; and Japan has taken over or temporarily liquidated most of the major sources of Chinese revenue, including the Maritime Customs. This list could be prolonged considerably; but when I had made it out and had at the same time realised the necessity of explaining why the war was not over (except on paper) I drafted a further list of various points which I believed to be relevant to the question of why and how the war is being prolonged and what may be the end of it.

The first of these points was Russia. Russia is clearly important, either actually or potentially or both. All the same, I am not going to say anything about Russia. I have heard and indeed indulged in much intriguing speculation about Japan's designs on Russia and Russia's designs on China and the inevitable conflict of both. I could, in fact, talk for hours on the subject; but I do not actually know anything about it, so I think that point can be left safely in the hands of *The Daily Mail* correspondent in Warsaw, who will do full justice to it. So the first thing I am going to do is to go back to 1931. On 18th September, 1931, when the Japanese invaded Manchuria, I was in the almost legendary situation of being halfway between Omsk and Tomsk. I was on my way to Manchuria. I got there a week later and saw a very little of the initial stages of the Japanese occupation. I saw a good deal more of it in 1933, and still more in 1935; and I have always followed it with a certain amount of interest. It has been particularly interesting to observe how the technique of the Japanese invasion has deteriorated. The successful conquest of China is a delicate rather than a difficult task. The military aspects of this task are at present essentially secondary. From the military point of view the China of to-day (or the China of 1937–38) was money for jam. Her armies, though they had many excellent qualities, were as near as makes no difference incapable of winning a pitched battle against an adequately equipped and determined enemy. So, for any invader who cared to tackle China, the core of the problem was not conquest but consolidation, by which I mean not so much colonization (for the Japanese are poor and reluctant colonists in the accepted sense of the word) but rather the effective bringing of the country under some form of colonial rule. This, as I say, is a delicate rather than a difficult task. The Japanese have been actively engaged on it for seven and a half years and their

technique, to my mind, has deteriorated enough perhaps to jeopardize their prospects of ultimate success.

In 1931–33 the occupation of Manchuria and Jehol was carried out with a certain amount of harshness but without undue, widespread or wanton cruelty. I very well remember going along in 1933 with a Japanese punitive column which was out after bandits in the mountainous country East of Mukden and Fushun. We did not catch the bandits, but we were reasonably popular. It was very poor country, and everybody was glad to see us. We dispensed medicine and, with the help of a gramophone, propaganda. Part of our popularity was no doubt due to the hospitable and conciliatory nature of the Chinese peasant, who is all for umbrellas and appeasement in almost any circumstances. But the fundamental reason for our popularity was that we represented security; we drove the bandits away even if we did not catch them. Also we treated the inhabitants right; our propaganda was not perhaps very brilliant—when I say ours I mean the Japanese—but the troops behaved themselves in the sensible and chivalrous way which made them so popular at the time of the Russo-Japanese War. These troops and their counterparts elsewhere represented the effective sinews of Japanese rule in Manchuria, and I think in 1933, and to a less extent in 1934 and 1935, that rule would have struck an observer as benign at any rate in intention, though perhaps rather clumsy in practice, because Japan, being a young country, is inexperienced in these matters and therefore over-methodical, over-suspicious and on the whole rather short-sighted. There may still be parts of China where the bandits are bad and where the appearance of a Japanese column would be welcome to-day, but there are very few such parts. This was not so—and I cannot emphasise this point too strongly—at the beginning of the war. The Chinese peasant accepts the inevitable more easily and with a better humour than anybody else in the world. He is not interested in politics under normal conditions; his patriotism and his pride of race are dormant qualities, and he strongly disapproves of war. At the same time, he is used to or resigned to war. War to him is like exceptionally bad weather to an English farmer. It turns up every so often; you grumble at it, you try to adapt yourself to it, and you lose by it. War and the men who wage it represent a major nuisance to the Chinese peasant. But he cannot hope to avoid this nuisance indefinitely, so he trusts to luck and to his own tact and resource to keep him afloat after the tide of war has passed. That, I think, was how most Chinese peasants and most Chinese villages felt about the Japanese invasion when it began: they hated the war, they hated the idea of being fought over, but they had not any very strong objection to being conquered and they did not hate the enemy. They took, in fact, an eminently practical view of the whole matter.

All that changed very quickly. After the first few months people began to realise that this was not like the other wars. It was not just a question of a corrupt General with a lot of truculent young men who would come and make a nuisance of themselves in your district for a bit and then move on to the next Province with a certain amount of plunder but without doing too much damage. The refugees began coming back from the war areas and the peasants learnt from them what this war really meant. They began to realise that the Japanese were different. First of all they bombed you, which was very tiresome; then when they got near your village they shelled it while the fighting was going on; and then they captured it. Those things—shells and bombs and shooting—represented to the Chinese the normal hazards of war, perhaps in a little more drastic form than usual; but what they were not prepared for was the subsequent conduct of the Japanese army of occupation. It is at all times difficult, I imagine, for an army of occupation to escape charges of bad behaviour or undue severity, but I think there is no doubt at all that the Japanese have, greatly to their own disadvantage, consistently broken most modern records in this connection. I mention this not merely because it is true but because it has got, as I hope I shall be able to show, an important bearing on the Chinese capacity and will to resist. The Chinese peasant dislikes anything which seems to him unreasonable or unpleasant or against his habits and way of life, but he is seldom prepared to do anything very much, except in a passive way, to resist unpleasant things. It is only when they become really intolerable that this vast inert repugnance becomes mobilized into a positive force. I am quite certain from my experience on two fronts in areas which in both cases had been recaptured from the Japanese that much of that process of mobilization is directly due to the ill-advised behaviour of the Japanese army of occupation in China.

That is one side of the picture, but there is on the other side a point which has been very seldom made, the attitude of the Japanese to the Chinese. You hear confirmed reports of the burning of villages and the machine-gunning of the inhabitants and all that kind of thing. It sounds, and is, very dreadful, but you must remember that the Japanese have a small army in a big country with a numerous population. That population has been instructed to resist them by guerilla warfare, by sabotage and by every means within its power. It is therefore very difficult for a Japanese commander not either to risk the safety of his own troops by being just and merciful, or else to risk a charge of brutality by going to the opposite extreme. They mostly go to the opposite extreme, but it is worth bearing in mind that they have got that amount of justification. They do not, I think, regard the life of a Chinese as a thing of any account

at all. They have when they get on the mainland a curiously exalted, almost missionary, sense of their own superiority ; and in the light of that sense they do not take the Chinese at all seriously as human beings. Then again, a great deal of their misbehaviour is due to exasperation. Looking at the thing from their point of view, they feel that several of their friends have been killed in trying to capture a certain place and they resent this very much. They also feel that the destinies of their country are being impeded by the Chinese, whom they regard as a despicable people, and accordingly it is not difficult for them to work up a revenge-complex and give vent to it.

There is another and perhaps rather academic point, and that is that the killing of Chinese is to a Japanese, in view of his country's policy and purposes, a form of political murder. It is not butchery or ordinary murder : it is political murder, and political murder, as you know, has always been to some extent condoned in Japan. Those are all slightly abstruse points, but I think they were worth making, because I have never seen them made before.

The person who is prolonging the war more than anybody else is the Chinese soldier. In the past he has been a joke ; we laughed at him because he came on parade with an umbrella ; we laughed at him because he went up to the front carrying a singing bird in a cage—which, after all, is a very reasonable thing to take if you cannot afford a gramophone—but he actually is very good military material. Under good leaders he is admirable ; but the trouble, of course, is that he seldom has good leaders ; and even now, when the Chinese are fighting together with more unity than they have ever shown before, they have got no trained General Staff. Apart from that, there is a more fundamental obstacle to the development among the Chinese of a really sound military technique and tradition. The Chinese peasant, the raw material of the army, has to an extent which you will not find in Europe no tradition of leadership or of co-operation. In his village he is used to doing things in conjunction with other members of his family. The family is a unit which does co-operate, but outside that, except in exceptional cases, there is no such thing as the *habit* of co-operation. For instance, if five men in a village were told to turn up at the station at half-past six to-morrow morning they would all think themselves fools if they did so, because they would know the others would not be there. Also, unlike most other backward peasants—backward by our standards, I mean—they have not got the feudal tradition of leadership. There is no tradition of following the young squire or the old magistrate to battle.

The attitude to the war of the educated and wealthy Chinese is inclined to be somewhat academic. To foreigners in China this seems

very odd. They arrive in Hong Kong and see a lot of able-bodied, well dressed young men sauntering round the streets and they cannot understand why they are not burning to go and die for their country. They find the same sort of thing, though to a lesser extent, in the back areas in China proper. That again is a thing on which a foreigner's judgment is not really reliable. If any Chinese above a certain income level deliberately goes and takes part in the war, he is to his friends a phenomenon at least as rare, at least as extraordinary and at least as little understood as a conscientious objector was in this country during the War. It is almost exactly like that; the tradition is against war, particularly if you have money and can get out of it. They are breaking that down, and I need hardly say that a great many of the young and wealthy Chinese are doing extraordinarily well, not always at the front but in medical work, some of them as pilots, and in important organizing activities near the front. I have tried to explain that it is not extraordinary, it is not bad of them that they do not want to go to war; it is simply natural.

There are, I think, two or three other reasons why the war is being prolonged. There is the question of the guerillas, who are undoubtedly tightening their hold on large parts of the Japanese occupied areas. It is justly said against them that they have not interrupted for a decisive period any vital line of communications, although the lines of communications are very long and very vulnerable, and to that extent they have been less effective than they should have been. I think they are gradually improving in organization and in initiative, and will undoubtedly be something more than a thorn in the flesh of the Japanese for many years to come. They themselves, when you charge them with being ineffective and not decisive enough, say: "Well, you foreigners do not understand. It is no good our capturing a big walled city from the Japanese. It means we are going to lose a lot of men in doing it; we are going to lose still more men in trying, perhaps unsuccessfully, to hold it, when the Japanese really concentrate on it seriously and bring their aeroplanes up. The same with the railways; you cannot cut them for long because you have got to be able to hold the sector you have cut. If we do that, then the Japanese very quickly bring a big troop concentration against us and we lose men, we lose morale and we do not accomplish very much. The only thing to do is to go on with little pinpricks, keeping the Japanese on the run, making them slightly increase their garrisons, restricting their mobility, and so on." There is something in that argument, but it is affected, like so much of Chinese military theory, by that dread of finality which the Chinese have. They do not like doing anything irrevocable. When I was at their military headquarters—I was there as a correspondent of *The Times*—they used to issue war communiqués every day, and it is characteristic of Chinese military practice in the past and to a certain

extent of their theories to-day, that a very common phrase in those communiqués was " The Japanese in Pingchow are completely surrounded on three sides."

A word or two about the air : I am bound to say that although I saw a certain amount of bombing I never saw the Japanese hit anything they were aiming at ; but I do not think there is any reason to write their air force off as people sometimes do, although on one occasion I know they got rather badly beaten up in the air ; that was at the end of April, when I was in Hankow. It was the Emperor's birthday and they sent over three squadrons, consisting altogether of thirty-six aeroplanes. The Chinese had worked out that that was what they would do and they accordingly sent up fifty-four aircraft against them, roughly half the pilots being Russian and the others Chinese. Of the thirty-six aircraft that came over twenty-one were shot down. The Chinese lost five aeroplanes and had two badly damaged. Incidentally, the pilot of one of those they lost had what I suppose is the maximum amount of bad luck : he was a Russian, and he dived on a formation of Japanese aircraft, went through them and below them and ran into one of his own anti-aircraft shells. He baled out in his parachute, came down a few miles outside Hankow, where he was immediately beaten up by the peasants who thought he was an Italian volunteer in the Japanese Air Force.[1] He was still in hospital when I left China.

Finally, I would like to say a few words about Chinese communications. Japan now controls virtually the whole coast. There remains the French Railway up through Hanoi into Yun-nan. It is a narrow-gauge railway, and the French seem to be uncharacteristically dubious about allowing it to be used for munitions. They alternately impose and withdraw the embargo on munitions. I think it is on now—a man who went up there in August said the embargo was on; but judging by the number of cases of musical instruments which were being railed into Yun-nan it must be assumed that every village in the Province had a symphony orchestra.

Then there is the Russian route, which now links up with a fairly adequate system of main highways. A certain amount of stuff has been coming down that road ever since the war began, but it is a long way—three weeks by lorry from the Russian frontier to Hankow. The road is not very good, and it is surprising how little a convoy of lorries can carry as compared with a small freighter.

There is one other route in which there is a certain amount of interest just now, and that is up past Mandalay. That was the way we went in

[1] The Italians are curiously unpopular in China. There is an impression that they are fighting for the Japanese as volunteers.

about ten months ago. I think this Burmese route is going to be important one day. It gives us a slender chance of recouping at Rangoon a part, perhaps only a very small part, of our losses on the Yangtse and elsewhere. It would not be a bad thing if a good deal of attention were given to the possibility of developing it.

DISCUSSION

VICE-ADMIRAL A. CRAIG WALLER: Could the Lecturer tell us anything about the provisional governments which the Japanese have set up in the parts of China which have been already occupied; how they are functioning and what their prospects are for the future?

THE LECTURER: I think the thing that strikes one most about the provisional governments is that their members represent a very fine market for bullet-proof cars. They lead an unhappy life. They run the risk of assassination the whole time. I did not see anything of the one at Nanking, but I saw the one at Peking. As far as I can judge they wield very little effective power. They are mostly oldish men and most of their records are not very good. Some of them are doing it, I think, from a more or less patriotic motive, and others are merely on the make; I should say the majority are on the make, but I do not think they are making very much so far.

It is rather interesting to watch the progress, such as it is, of these governments. I remember in 1933, before the war, foreigners in Manchuria used to say, not without surprise, that the Japanese army of occupation in Manchuria was getting a little independent of the High Command. It was striking out on its own to a certain extent; there was nothing very sensational, but still, it was taking its own line and playing its own game. It seemed then a surprising thing, but that tendency towards separatism has grown in the Japanese fighting services in China during the war to an extraordinary extent. You have an army in Manchuria with its own aspirations, both economic and strategical, and with a certain interest in the Mongolian Corridor. Then you have the army of the North. They have their own ideas and plans and their own puppet Government. Then you have the army on the Yangtse, which has its own puppet government at Nanking, its own commercial interests, and its own economic plans. Now you have an army in the South with some kind of provisional puppet government at Canton.

For a very long time, almost ever since the capture of Nanking, the Japanese have been saying that they were going to amalgamate Peking and Nanking, but they have never got anywhere near doing it. Japanese armies have taken on almost the sort of War Lord pattern which existed in China ten, twelve or fifteen years ago. They are pulling against each other. It is nothing serious, because they co-operate extraordinarily well in the field, but there is no question that politically they are not a single unit operating with a single policy.

THE CHAIRMAN

I feel that the very complete and interesting picture of the state of affairs in China given by the Lecturer supplies the reason for it not being necessary to ask him many questions. I do not think this is a proper time to endeavour to add anything to what Mr. Fleming has told us, even if it were possible. It is my privilege to thank him most heartily for having given us this lecture and for having come here and devoted his time to it.

The customary votes of thanks to the Lecturer and Chairman were carried by acclamation.

AIR RAIDS AND THE BELGO-DUTCH BARRIER

By J. M. SPAIGHT, C.B., C.B.E.

THAT slice of land which intervenes between southern England and Germany may be compared to the "bulge," devised in the light of experience in the Great War to protect our warships' hulls from under-water attack. For generations we have shielded our shores from invasion by a kind of "defence bulge" in the shape of the Low Countries: not by acquiring territory there but by insisting that no powerful State which might menace our security should establish itself in those lands. Antwerp, we know, has for long been regarded as a potential pistol pointed at our head: a pistol, that is to say, if it passed into a great Power's hands. It has been a cardinal point in our foreign policy to see that Belgium and Holland remained sovereign and independent. To-day it is more important than ever that they should not come under the domination of any Power of the first rank. If air bases were established in either of these countries the danger to London and South-Eastern England would be very seriously increased. Bombers starting from them could be escorted by fighter aircraft, and the task of our interceptors would be made more difficult. The shorter distance to be traversed would enable more frequent raids to be undertaken by a given establishment of first-line bombers. Heavier loads of bombs could be carried because less fuel would be needed for the journey out and home. Not merely as a taking-off ground but also as a passage way, is that slice of Europe important to our security. If hostile bombers were free to fly across it in their raids upon this country the air menace to London would be intensified. The possibility of it being used for this purpose cannot be so lightly dismissed as can that of our ever being at war with either Belgium or Holland.

The question of air passage is one of particular importance for us because of the unfortunate geographical position of London. It is most unfavourably situated in regard to possible air attack. A fast bomber from the Continent, making the nearest landfall to it, would be over the city in about a quarter of an hour from the time when he reached our coast. Berlin, on the other hand, would be a full hour's flight from the North Sea. The proportion of the journey during which a bomber would be subject to attack by interceptors would consequently be four times as great in the latter instance. Further, the length of the warning which London could be given of an impending raid would be much shorter.

That is the debit side of the balance sheet from London's point of view. To the credit side is the existence of the Belgo-Dutch barrier—if it indeed proves to be a barrier. South-Eastern England is shielded by it from direct air attack. Berlin would be similarly shielded by it if an attack were to be launched from South-Eastern England, which it is unlikely to be : the natural taking-off area would be further North, and from (say) Lincolnshire the line to Berlin would be almost as the crow flies. Conversely, of course, the industrial North would be open to direct attack from Germany.

The shielding of London is more important than the protection of any other part of this island : which does not mean for one moment that the other parts need no protection. London is likely to be the magnet which will attract irresistibly the force of a Germanic air attack. The totalitarian theory of war will see in a smashing assault upon the city a possible means of snatching a decision before the slow mills of our economic blockade can grind out victory. We must expect raids on London, and raids of great intensity, if—*quod deus vortat*—the war, which we assuredly do not desire, should come.

But, it may be asked, will the Belgo-Dutch barrier be in fact any protection so far as air passage is concerned ? Will not German bombers take that route, with or without leave ? If it pays them, surely they will not be deterred by any scruple from taking the short cut ? Perhaps; but the odds are that they will go round, for a number of reasons. One is that they will not wish to antagonize Belgium and Holland, both of whom will be useful sources of supply. Another is that while Belgium and Holland are peace-loving States, both have shown unmistakably that they are determined to maintain their neutrality and to use force for that purpose if necessary.

Holland's position in this matter was made clear in the Great War. She, more than any other State, established the practice of the closing of neutral frontiers to belligerent aircraft. She protested again and again, and in the most emphatic terms, against the entry of German and, occasionally, British and French aircraft into her atmospheric borders ; and her action did not stop at protests. On scores of occasions the Dutch troops fired on German (and French) aircraft which crossed or tried to cross the frontier. The most famous instance was that in which the airship L.19 was the victim ; she was fired on by Dutch coastal artillery when she was making for Ameland on 1st February, 1916, and so disabled that she subsequently sank in the North Sea. Before she sank she was approached by the British trawler " King Stephen," whose captain refused to accede to the appeal of the airship's crew to save them. The indignation which the incident aroused in Germany was about equally divided between the

Netherlands and Britain, but trespasses by German aeroplanes continued to occur from time to time, despite the lesson then taught. Other instances in which German aircraft were shot at and forced down by Dutch gunners occurred at Texel on 6th August, 1917, at Beerta (Winschoten) on 18th August, 1917, and at Cadzand on 25th September, 1917.

The German Government on its side disclaimed any desire or intention to violate Dutch sovereignty. Since the beginning of hostilities, it was stated in a note of 18th August, 1915, aircraft pilots had received the strictest orders never to fly over the territory of neutral countries. When they did so it was the result of mistake or *force majeure*. That was probably no more than the truth. Mistakes in regard to the exact frontier line were to be expected, especially at night. Our own aircraft made a very unfortunate one when they dropped bombs on the Dutch village of Zierikzee on Schouwen Island on the night of 29th–30th April, 1917, killing three persons and damaging about a hundred houses. Our Government paid heavy compensation to make good, so far as possible, the loss and damage caused on this occasion.

The attitude of the Dutch Government was made clear in a note sent to Germany on 10th July, 1915. "If an aeroplane is found over Dutch territory," it was stated, "it is immediately a target for fire, this being the sole method of enforcing respect for the territory's neutrality." Again, after the L.19 incident, the Netherlands Government stated, in a reply dated 18th March, 1916, to the German protest: "In the interest of national defence, as well as for the purpose of maintaining a strict neutrality, a neutral State is justified in opposing by force every passage of its frontiers by belligerent aircraft, unless they indicate by a white flag or other signal their intention to land. Considerations of humanity may lead the authorities to defer the resort to force until the aviator has been warned that he is above neutral territory, but no such warning is obligatory. Hence The Queen's Government, in communicating to the Powers concerned the Royal Decree of 4th August, 1914, forbidding foreign aviators to cross the frontiers of the kingdom, signified that it could accept no responsibility for the consequences of an infraction of this prohibition."

The drastic measures which the Netherlands took to prevent infringements of its sovereignty of the air in 1914–18 would be taken again, there is every reason to believe, in a future war. When the Bill to modify the Conscription Law was before the First Chamber at The Hague in February, 1938, the Government made a statement upon this subject. Holland, it said, must be able to offer resistance to attempts by foreign military aeroplanes to cross her territory. The necessary measures had already been taken in part, and would be completed as soon as more material was available for air defence. The flight of foreign airmen over the country in

order to commit acts of war, it was expressly stated, was regarded by the Dutch Government as a breach of neutrality which must be resisted by force of arms.

Belgium was a belligerent in 1914–18, but may be a neutral State in another major war ; the consequences of the invasion of her soil in the late war are not likely to be forgotten. Her attitude to the question of air passage may be inferred from some references in the Note which Baron von Neurath, the German Foreign Minister, handed to Vicomte Jacques Davignon, the Belgian Minister in Berlin, on 13th October, 1937, in regard to the inviolability and integrity of Belgium. The Note stated that the German Government had taken official notice of the attitude to which the Belgian Government had given expression and which declared the intention of that Government "to defend the frontiers of Belgium against every attack and every invasion, with all their forces, to prevent Belgian territory being used for an attack against any other country, either as a way of passage or as a base of operations, by land, sea or air, and to this end to organize the defence of Belgium in effective fashion."

It is evident that both the Netherlands and Belgium are determined to refuse passage to belligerent aircraft and to back the refusal by resort to force. Whether they will be able to prevent aircraft from crossing their territories at great heights and by night remains to be seen. It is probable, however, that Germany for her part will hesitate to do anything which would amount to non-acceptance of the principle of neutral sovereignty in the air. Her own eastern frontier would be protected from the incursions of Soviet aircraft as a result of the application of that principle in a Russo–German war in which Poland was not involved as a belligerent party. She could hardly sing one tune in the West and another in the East.

The Belgo–Dutch barrier, one may conclude, would prove to be an effective one and a preventive of direct air attack in any war in which we and Germany might unfortunately become engaged. How will its existence affect us and Germany, respectively ? The answer depends to a considerable extent upon the comparative development of British and German aircraft, especially bombing aircraft, at the time when, if ever, such a catastrophe as a war between our two countries should occur. The range and carrying capacity of bombers, their speed and armament, the number both of first-line machines and of reserves to replace losses will all be factors in the equation. The most important will be, perhaps, the fuel tankage and the bomb-loading space available in the machines designed for the long-distance raids.

Comparison of our bombers with Germany's is difficult, since the performance of the newest types is an official secret. It is absurd, however, to assume the worst, and to say, as some critics have said, that we are

definitely behind in quality as well as quantity, that we have no machines capable of raiding Berlin, and so on. We know from what Sir Kingsley Wood has said that the Hampdens which are being built in Canada could be delivered here under their own power. We know, too, that our Wellesleys can fly non-stop to Australia from Egypt. It is obvious, indeed it is merely a matter of knowing that about 310 gallons of aviation spirit go to the ton weight, that we have bombers which could carry a sizeable load of bombs to Berlin and get back again. The Wellesley, a single-engine bomber built on the Vickers-Wallis geodetic principle, is being followed by the Wellington, a twin-engine bomber of similar construction but of much improved performance. The Wellington, it is reasonable to assume, must compare very favourably, in range and bomb loading capacity, with the favoured German bombers, the Dornier Do. 17 and the Junkers Ju. 86K, which are commonly credited with a range of 1,500 miles and a bomb load for that range of about three-quarters of a ton. In speed, too, we are not behind ; the latest or long-nosed Blenheim can do 295 miles per hour, which is slightly better than the 292 m.p.h. of the Do. 17 with Daimler-Benz engines.

We have no lack of machines capable of raiding the heart of Germany without having to cross Belgium or Holland. The Belgo–Dutch barrier would not indeed affect our bombers, since they would take off and land again, in all probability, at points in this country between which and Berlin that barrier would hardly intervene at all. German bombers whose objective was London would have to skirt the barrier ; but the handicap thus imposed upon them would be off-set to the extent that they would have to fly for a shorter time, as already stated, over hostile territory. Our bombers would be unable to fly at cruising speed once they had crossed the German frontier. They would use up more fuel on this part of the flight than would the German bombers while flying over English territory. Our capital's closer proximity to the coast, as compared with Germany's, would be of more consequence in these circumstances than the existence of the neutral barrier.

Berlin may not, however, be the objective of our raids. It is quite possible that other targets will be thought to be preferable. They may be the same kind of targets as those which General Trenchard's Independent Force sought predominantly in 1918. This force, operating from a base near Nancy, made more raids on German aerodromes than any other class of objectives. The weight of bombs (220 tons out of a total of 550 tons dropped in all during four months) would be almost trivial in comparison with the weight which would now be dropped in a day or two ; yet it was a notable weight for those days and the result was undoubtedly to reduce the scale of German bombing attack on our own aerodromes and also to divert German fighters from the front to the internal areas which were

subject to attack. Militarily, our raids were more profitable than they would have been, in all probability, if they had been directed against Berlin.

Our objectives in a future war may again be dictated by military rather than psychological interests. Commenting on a paper read at the Royal United Service Institution on 23rd November, 1938, Marshal of the Royal Air Force Sir Edward Ellington said that our counter-attack would "be likely to be made on the enemy's aerodromes, their reserves, their ground organization and possibly their manufacturing capacity." In so far as such objectives are situated in western Germany they would be shielded by the interposition of Holland and Belgium. Another route would, however, be open for direct attack upon them—the route from bases in Lorraine or elsewhere in eastern France. It is probable that use of such bases will be made by our Air Force as well as the French in a future war, but it is evident from some further remarks of Sir Edward Ellington's on the same occasion that raiding from England will tend to become the practice. "The counter-attack will be largely launched from the home aerodromes," he said, "and in the future may be entirely launched from them." These words point clearly to a situation in which our bombers are expected to have an ample radius of action to allow them to raid any desired objectives in Germany from this country, and thus to become independent of French facilities. Their capacity will, in fact, be such that the interposition of the Belgo–Dutch barrier will be a matter of no great consequence.

It is wholly improbable in any event that we for our part would infringe Belgian or Dutch neutrality by sending bombers across the territories of these countries. We shall not even be tempted to do so if we have machines of such range and capacity that the extra mileage involved in taking the roundabout route can be disregarded. It will be a matter primarily of engine power. There are other factors, too, to be considered, such as the comparative efficiency of our machines from the aerodynamical point of view, the provision of the latest variable pitch propellers and retractable undercarriages and so on. It is engine efficiency, however which counts most of all. In 1918 we beat Germany to the wall in engine construction. She had nothing then to equal our Rolls-Royce and Bentley Rotary engines. We can beat her at the same game again. When we have done so we shall be even less handicapped by the Belgo–Dutch barrier than we are at present. If we are on top in performance its existence will be an advantage to us in South-Eastern England and a disadvantage to Germany so far as her intention and policy may be to raid that part of Britain. But, when all is said, our best protection will always be a superabundant supply of interceptor machines and of 3.7-in. and 4.5-in. A.A. guns. These, one is happy to note, are now pouring from the factories in ever increasing quantities.

THE INTERNATIONAL SITUATION

POWER POLITICS

DURING the years after the Great War military force was increasingly discredited and politicians of all countries indulged in a veritable orgie of noble pacts, agreements, treaties and covenants. Britain led the way in a "gesture" towards disarmament by actually disarming "to the verge of risk," as that prince of idealists, Mr. Ramsay MacDonald, described it. It was a wonderful dream-world into which a gullible electorate was led in those days, and its Mecca was Geneva, where the new tower of babel was being built, to prove that although there might be many different tongues, they would in future all speak with one voice.

Unfortunately there was a fundamental fallacy at the root of all this idealism. It was assumed that, on the whole, everybody would be satisfied with the way in which the map had been redrawn after the War ; or, at any rate, if some little adjustments should seem necessary, they would be made in an atmosphere of good will and brotherly love under the auspices of the League of Nations. But it soon became evident that some nations were profoundly dissatisfied with their lot, yet the others were not prepared to do much about it. Here was the rift in the lute which led to the discord we see to-day.

Most comprehensive of all the international contracts signed in pathetic good faith was the Kellogg Pact of 1928, which finally outlawed war as a means of settling disputes. Of the fifteen nations who subscribed to this document, Abyssinia, Austria, China, Czechoslovakia, Germany, Great Britain, Hungary, India, Iraq, Italy, Japan, Paraguay, and Spain have all had recourse to arms in some shape or form since then. Italy, feeling that she had come off badly in the process of remapping, cast coveteous eyes round for territory to enhance her importance as a world Power, and disregarding all conventions, laid violent hands on Abyssinia ; Japan saw a golden opportunity to satisfy her ambitions and invaded, first Manchuria and then China ; India, Iraq and Paraguay became embroiled in those small wars with turbulent dependents or tiresome neighbours from which the world is seldom quite free ; Spain indulged in a "private fight" ; and even peace-loving Britain was compelled to engage in a sort of triangular duel with Arabs and Jews in Palestine.

But all this time a great virile nation was recovering its martial spirit. For Germany, the League of Nations meant nothing more than a device to keep her subject to the irksome and humiliating conditions imposed on her by the Versailles Treaty. Over five years ago she left the League and took her destiny in her own hands—or let us say she confided it to hands which would guide it with that craftiness and ruthlessness which have always appealed to the predominant partner—the Prussian. Herr Hitler, although not a Prussian, has not failed to come up to standard; to him—we realize in full now—the pledged word, the signed "scrap of paper" mean and have meant *nothing* save methods for tiding over a difficult situation, misleading obstructionists, or lulling potential enemies or victims into a sense of false security. For the episodes of the Saar, the Rhineland, the occupation of Austria and the Sudetenland, he had plausible excuses for breaking solemn pledges; but for his latest outrages there can be none; the "gloves are off," we are perilously near a return to "nature in the raw."

HITLER'S PLEDGES AND THE SEQUELS

It is easy to be wise after events; yet the "writing on the wall" has been there for us to read these years past. A member of this Institution has recently compiled a chronological list of Herr Hitler's pledges and the sequels[1]; and we are indebted to him and the Editor of *The Times* for the following summary:—

Rearmament.—17th May, 1933: "Germany will tread no other path than that laid down by the Treaties. The German Government will discuss all political and economic questions only within the framework of the Treaties." (Reichstag).

14th October, 1933: Germany left the League and the Disarmament Conference.

13th March, 1935: It was officially admitted that Germany had begun to raise an air force in violation of the Versailles Treaty, and that as other parties to that Treaty had not complied with its disarmament clause, she would no longer be tied by the limitations imposed on her arms.

Locarno.—30th January, 1934: "After the Saar has been settled the German Government is ready to accept not only the letter but the spirit of Locarno." (Reichstag).

13th March, 1934: "The German Government have never questioned the validity of Locarno." (Note to France).

2nd May, 1935: The Franco-Soviet Pact was signed.

[1] Letter of Mr. R. A. Pilkington, M.P., to *The Times* of 25th March, 1939, p. 8.

21st May, 1935 : "The German Government will scrupulously observe every treaty voluntarily concluded. In particular they will hold to all obligations arising out of Locarno so long as other parties are ready to stand by that Treaty." (Reichstag).

7th March, 1936 : Germany denounced Locarno and reoccupied the Rhineland opposite France and Belgium. The excuse given was the Franco-Soviet Pact, to which Belgium was not a party.

Austria.—17th May. 1933 : *"The German people have no thought of invading any country."* (Reichstag).

14th October, 1933 : "When the Saar has been returned to Germany only a madman could consider the possibility of war between France and Germany. *No one would demand that millions of men should be annihilated for a readjustment of our present frontier."* (Reichstag).

21st May, 1935 : "Germany neither intends nor wishes to interfere in the internal affairs of Austria, to annex Austria, or to conclude an *Anschluss."* (Reichstag).

7th March, 1936 : "Germany will never break the peace of Europe. After three years I can regard the struggle for German equality as concluded to-day (after the Rhineland occupation). *We have no territorial demands to make in Europe."* (Reichstag).

11th July, 1936 : Austro-German Agreement recognizes Austrian sovereignty.

12th February, 1938.—Hitler reaffirms to Schuschnigg at Berchtesgaden the Agreement of 11th July, 1936.

11th March. 1938 —Germany annexes Austria.

1st January, 1939.—"In January, 1938, I finally resolved that during this year I would in one way or another win the right of the six and a half million Germans in Austria to self-determination." (Reichstag).

Czechoslovakia.—22nd September, 1938 : Mr. Chamberlain in the House of Commons on 28th September, referring to the meeting at Godesberg, said : "Hitler repeated to me with great earnestness what he had already said at Berchtesgaden—namely, that this was the last of his territorial ambitions in Europe and that he had no wish to include in the Reich non-Germans . . . I have no hesitation in saying, after our personal contact, that I believe he means what he says."

26th September, 1938.—"The last problem which must be solved confronts us. *It is the last territorial claim which I have to make in Europe,* but it is one I will not renounce . . . We do not want to see other nations among us. We want to live our own life and we want other peoples to do the same. Our foreign policy aims are thus limited . . . We do not want any Czechs." (Berlin).

29th September, 1938.—The Munich Agreement said that as soon as Czechoslovakia had satisfied Hungarian and Polish claims Germany would be prepared to guarantee the new frontiers.

9th October, 1938.—"Now as a strong State we can be ready to pursue a policy of understanding with surrounding States. We want nothing from them. We have no wishes, no claims." (Saarbrücken).

14th March, 1939.—The German Foreign Office told the French and British Ambassadors that Germany intended no drastic move.

15th March, 1939.—Czechoslovakia was invaded and annexed.

Just a week after the invasion of Czechoslovakia, Lithuania was given an ultimation to surrender Memel, and under threat of military action that territory was made over to Germany on 22nd March.

The process of acquiring new territory without having to fight for it has been brought to a fine art by the Nazi regime: the German inhabitants of the country marked down as the next victim are encouraged from the *Vaterland* to organize political demonstrations; when these have developed into or caused rowdyism which compels the local authorities to restore order, the whole Nazi Press is turned on to proclaim that a state of terrorism exists for German nationals; the stage is now set for the final act. If the Nazi element is sufficiently strongly represented in the government of the country, an appeal is sent—ostensibly in the name of the people as a whole—to Germany to step in and incorporate it within the Reich (e.g., Austria). If, however, the government is not dominated by Nazi representatives, its nominal head is lured to Germany; once there he is in the spider's web, and is threatened with the annihilation of the capital of his country by bombing aircraft within a few hours unless he signs on the dotted line (e.g., Czechoslovakia and Lithuania).

What actually would have happened if any of Germany's victims had refused to give in must remain a matter for speculation, for so far they have crumpled up under the mesmerism of these Power Politics. But now it looks as if Hitler has come to the end of his gangster's trail and is finding himself faced by nations of tougher calibre; moreover, the great democratic Powers have at last been brought to realize that force can only be met by force and that the sooner this new Napoleon's efforts to dominate Europe are checked the better it will be for the peace and happiness of the world. A halt was first called at the Polish frontier, and Poland has made it clear that she is prepared to stand her ground. Moreover, she has been assured of the necessary backing. On 1st April, our Prime Minister stated that "in the event of any action which clearly threatened Polish independence and which the Polish government accordingly considered it vital to resist with their national forces, His Majesty's Government would feel themselves bound at once to lend the

Polish Government all support in their power. They have given the Polish Government an assurance to this effect." The Premier added, "the French Government have authorized me to make it plain that they stand in the same position in this matter as do His Majesty's Government."

Herr Hitler's reaction to this announcement has been a tirade against "the encirclement of Germany." This, of course, is merely specious. No nation can logically complain of "encirclement" unless its object is to break out of its own boundaries and plunder its neighbour's territory. When this intention is as apparent as Germany has made it, she cannot be surprised if that neighbour seeks the support of friends to thwart her.

The Anglo-French-Polish agreement is not merely a political covenant, it is a military alliance ; and it has given a lead to other interested parties on the Continent. Moreover, in the background, but bringing more and more moral and economic pressure to bear on German aggression, is the United States. Not only have they, too, refused recognition of the annexation of Czechoslovakia and condemned, once again, "acts of wanton lawlessness and arbitrary force," which are "threatening the peace of the world and the very structure of modern civilisation" ; but on 19th March the American government took the very practical step of announcing that goods coming from Bohemia, Moravia, and Slovakia would in future be subject to the high general tariff applying to German goods ; furthermore, additional countervailing duties of 25 per cent. were imposed as from 22nd April on all products from Germany and the new German Protectorates until it can be shown that they are not subsidised.[1]

THE ITALIAN OCCUPATION OF ALBANIA

Inspired by the success of these "smash and grab" methods, Signor Mussolini proceeded to imitate them. In the small hours of Good Friday, 7th April, Italian troops disembarked at the Albanian ports of Santi Quaranta, Valona, Durazzo and San Giovanni di Medua. On the following day they entered Tirana, the capital, King Zog and his entourage having fled to Greek territory.

Italian and Albanian accounts of the events which led up to this new aggression have been strangely at variance. The former alleged that anti-Italian demonstrations by armed bands were threatening Italian residents throughout the country and that occupation was forced on the Italians by the misgovernment of King Zog, and was carried out at the request of the Albanians. Albanian reports, on the other hand, declared that the Chamber of Deputies had been compelled to reject what amounted to an Italian ultimatum because it was incompatible with the inde-

[1] Mr. Roosevelt's personal appeal to Herr Hitler and Signor Mussolini, published on 15th April, has immeasurably increased the moral pressure to preserve peace ; but at the time of writing their reactions are not known.—EDITOR.

pendence, sovereignty and integrity of their country. In any event, the whole episode had a distinctly Germanic note about it and at once raised grave questions as to Mussolini's real intentions and whether these were directly linked with German aspirations ; moreover, it is generally regarded as a breach of the spirit, if not of the letter, of the Anglo-Italian Agreement to preserve the *status quo* in the Mediterranean, signed just a year ago.

Parliament was recalled from an Easter holiday on the 14th April, and the Prime Minister announced that "in the event of any action being taken which clearly threatened the independence of Greece or Rumania and which the Greek or Rumanian government respectively considered it vital to resist with their national forces, His Majesty's Government would feel themselves bound at once to lend the Greek or Rumanian Government, as the case might be, all the support in their power." He added that they were also in communication with the Turkish government.

In the course of his statement, Mr. Chamberlain alluded to reports from Athens that Italy was intending to attack Corfu in the near future. The Italian government had been informed that any action of the sort "must be a matter of gravest concern to His Majesty's Government," and that it was vital that there should be no misunderstanding on this point. Subsequently, Signor Mussolini sent friendly reassurances to the Greek Government.

When a crisis of this sort arises there are always people not in a position of responsibility who have their own pet theories as to the immediate steps which the Government should take to "stop Hitler" or "make us safe." Lately these panaceas have included Conscription, a Minister of Supply, Collective Security—once more, a Round Table Conference, and a military alliance with the Soviet Union. Whatever the merits of all the others, the strategic advantages of a friendly Russia are manifest—to us ; but Poland and Rumania may be forgiven if they are not quite so enthusiastic. As the Prime Minister tactfully put it, "We have a very difficult task to perform. We have to consider not only what we wish but what other people also are willing to do." The Soviet regime is not really keenly interested in the welfare of any "capitalist" countries, and it is impossible to ignore the fact that it would assist the spread of bolshevism if those countries became victims of the same fate as that which overtook the Kilkenny cats.

Altogether it looks, therefore, as if Power Politics are likely to govern the world for some time to come unless they are dissolved in the cauldron of another great war. There can be no "appeasement" for rulers to whom the written bond and given word mean nothing and opportunism everything. However, Power Politics is a game that two can play ; yet it is not enough merely to prevent the other side from scoring goals. The Prussian

mind does not understand passive resistance. In the late war there was a form of action known as "reprisals" which was used with great effect; Germany still entertains hopes of recovering her former colonies; it should be made very clear to her that those hopes recede a step every time she makes an aggressive move in Europe. If those mandated territories were now declared part of the countries which administer them as a sort of moral "reprisal" for her recent ill-gotten gains, it would be a "gesture" which would be really understood by Prussian mentality.

It is sad to think that the deplorable state of international affairs which exists to-day need never have come about if we had not thrown aside our arms and trusted to "scraps of paper." But, if time is vouchsafed to us, we may yet right the balance of power and once more hold the scales evenly in the cause of justice and freedom. No other nation has ever been able to do so effectively, and we must never again be lulled into that false security, which means weakness. There is only one sure shield for peace in this disordered world, and that is the shield provided by Britain's fighting Services.

THE END OF THE SPANISH CIVIL WAR

ON LAND

DURING January, 1939, the Republican resistance in Catalonia began to weaken and by the beginning of February, their armies were in full retreat towards the French frontier. The Nationalist victory, which was a triumph for the strategical and tactical offensive over the defensive, affords one more proof—if proof were needed—that a defensive attitude leads ultimately to certain collapse.

After the battle of the Segre, where General Franco deployed seven army corps in a general attack on the Republican lines, rapid progress was made towards Barcelona and, on 26th January, the city surrendered without offering any resistance. The so-called Government, headed by Dr. Negrin, the Prime Minister, and by Senor del Vayo, Minister for Foreign Affairs, together with the demoralized remnants of the army of Catalonia, withdrew to the province of Gerona, where efforts were made to organize a stand. General Franco's troops captured 1,200 machine guns, 4 million gallons of petrol, a large quantity of gold and jewellery, 800 loaded railway trucks and 600 lorries. At a "Victory Parade" held later, in Barcelona, General Franco reviewed an army of 80,000 men, headed by the Italian Legionaries. Two hundred and fifty aeroplanes flew overhead.

After a brief pause for re-organization, the Nationalists resumed their offensive, and by 10th February, 1939, had driven the last remnants of the Republican Army of Catalonia over the Pyrenees into France, where

they were disarmed and interned. Very large numbers of Spaniards of all classes, civilians and soldiers, crossed the border; at the end of January, 78,000 civilian refugees were reported to have entered France and by 6th February, a further 150,000 soldiers were said to be seeking admittance.

These men brought with them considerable quantities of war material. The French authorities reported the confiscation of 150 5.9-in. guns, 150 anti-aircraft guns, 250 aeroplanes, numbers of tanks and armoured cars, 70 lorries of munitions and 11 lorries carrying gold and silver. These totals represent only a fraction of the equipment held by the Republican Army of Catalonia as much of their war material fell into the hands of the pursuing Nationalists. It does not appear, therefore, that the Republicans were so short of equipment as has frequently been alleged. A curious side-light was thrown on this factor in a speech by Dr. Negrin, the Prime Minister, to the *Cortes*, on 1st February, at Figueras. He confessed that "We have been forced to deal in contraband arms. We have even bought them—why not say it—in Germany and Italy." Not all the beaten Republicans, who entered France, were willing to stay there, and as early as 16th February, some 45,000 troops had applied to the French authorities for permission to join the army of General Franco.

The Republican leaders crossed over to France on 4th February, and later Senor del Vayo, Minister for Foreign Affairs, visited President Azana in Paris, with a view to organizing further resistance. The President's view, however, was that the war had been lost and his return to Spain would be useless. With the departure of the Republican Government from the soil of Spain, their moral right to speak for and to represent the country had been greatly undermined. A Communist revolt broke out in Cartagena, nominally against the Negrin Cabinet. This, however, was crushed by the Madrid *Junta*, who, on 5th March, proclaimed a Council of National Defence. General Miaja, the famous defender of Madrid, was appointed President and Colonel Casado, Minister for Defence.

The garrison of Port Mahon rose against the Republican Government on 8th February. After discussions between the Republican Civil Governor and the Nationalist Military Governor of Majorca, who travelled from Majorca in H.M.S. "Devonshire," terms for the surrender of the island were arranged. The British cruiser sailed with 450 refugees to Marseilles. A Division belonging to the Army Corps of Morocco left Barcelona for Port Mahon, escorted by units of General Franco's fleet, and took over the island practically without resistance. It is satisfactory that this important strategical locality remains in purely Spanish hands.

In Madrid, no time was lost by the Communists in challenging the new Defence Council and, on 7th March, a revolt broke out in favour

of Dr. Negrin. After forty-eight hours of street fighting, the Council secured the upper hand, shot many Communists and captured their headquarters at Canillejas—a suburb North-East of Madrid, with about 1,400 prisoners. Although some sectors of the Republican defences remained entirely un-manned during this crisis, the troops of General Franco made no effort to intervene. Nor was there any reason why they should, for the destruction of the Communist forces by the Defence Council was entirely in accordance with the natural development of the Nationalist plans.

After the suppression of the Communist revolt, negotiations were started for the surrender of the city. The Republican Defence Council offered to hand over their air force to the Nationalists as a token in return for favourable terms. This offer, however, was refused by General Franco, who insisted upon an unconditional surrender.

On 25th March, the forces under the command of General Quiepo de Llano launched an important offensive in Cordoba. Little resistance was offered by the Republicans, who laid down their arms by battalions and, by 28th March, the Almaden Mercury Mines were occupied by the Nationalist forces. On the same day, Madrid surrendered to General Franco without any resistance. General Miaja and Colonel Casado left for Valencia, but the Republican Colonel Prada remained in Madrid to facilitate arrangements for handing over. Before the Nationalist forces marched in, their supporters in Madrid, known as the "Fifth Column," seized the Union Radio Station and broadcast to the world the Nationalist slogan, "Viva Espana ; Franco, Franco, Franco." On 29th March, there was a general collapse of the Republican cause throughout Spain. Most of the provincial capitals, including Valencia, Almeria, Murcia, Cuidad Real, Cuenca, Albacete, Guadalajara, and Alicante surrendered either to the Nationalist troops or to General Franco's "Fifth Column" supporters within their boundaries.

General Saliquet's army of Central Spain, totalling 300,000 men, lead by twenty-five Divisional Generals and including the four Spanish-Italian Divisions, swept on to the Levante practically unopposed. The speed of the advance was such that thousands of Anarchists, Communists, Syndicalists and Left Republicans were captured without a chance of escape, and the prisoners exceeded 100,000. General Miaja reached Algiers by air on 29th March with a force of thirteen Russian aeroplanes and several high Republican officers and officials. Republican Spain no longer had even the semblance of a Government ; the offensive had triumphed ; the war was over.

AT SEA

The end of the very feeble efforts made by the Republican fleet during the Civil War came on 5th March, when eleven of its units left Cartagena and, two days later, surrendered to the French authorities at Bizerta. They consisted of the cruisers "Libertad," "Miguel de Cervantes," and "Mendes Nuñez" with eight destroyers. The whole force was interned.

The French Government subsequently agreed to make over all these ships to General Franco.

The destroyer "José Luis Diez," which had been interned at Gibraltar has also been turned over to the Nationalist naval authorities. The crew had been repatriated to Almeria in a British destroyer on 11th January.

With the termination of the Civil War, the services of the neutral observers on board ships visiting Spanish ports have been dispensed with while the Nyon Agreement also comes to an end.

Throughout the war, the British Navy has had to play an irksome and delicate role in upholding the policy of non-intervention while rendering every possible humane service to the belligerents with strict impartiality. It has been very largely due to the way in which those duties have been discharged that hostilities did not spread to other countries.

FRANCO'S UNDERTAKINGS

The British and French Governments gave "de jure" recognition to the Nationalist government of Spain on 27th February, and Ambassadors from the two countries were sent to Burgos.

In a Note, which had already been made public and which was sent formally to London shortly after this recognition, General Franco declared that, "the Nationalist government have never thought of ceding an inch of Spanish territory and would not in any way consent to the establishment within its territory of foreign bases."

This announcement is of great importance because it removes the last possible excuse for Italian troops and air forces to remain in Spain and implies that, in the event of a European war, Spanish ports would not be placed at the disposal of the German or Italian navies.

Britain and France will doubtless support Franco should any attempt be made to bring pressure on him not to adhere to his undertaking.

THE SINO-JAPANESE WAR

ON LAND

THE war of attrition drags on its melancholy length in China and a decision seems to be as far off as ever. The Japanese militarists have played practically all their best cards without, however, being able to induce the Chinese authorities to discuss possible terms of peace. Moreover, for the moment, at any rate, the offensive on several important fronts seems to have passed to the Chinese.

At the end of February, reports published from Chinese G.H.Q. at Chungking claimed that the guerillas in Shansi had fought thirty-eight actions with the Japanese and had torn up several miles of railroad. In Hopei, they had been in action a hundred and fifty times and had captured much war material, including small arms, lorries and tanks as well as harassing the railways round Peking. The Japanese have launched vigorous local offensives to deal with this menace and, early in February, troops under General Sugiyama advanced against the Chinese in Central Hopei and, in an eastward drive from Paotingfu, captured Anchow, an important guerilla centre, only some seventy-five miles South of Peking.

Important foreign interests were again involved when the Japanese, on 10th February, landed on Hainan Island, about two hundred miles East of French Tongking. One object of the occupation was alleged to be the prevention of the landing of arms from Hainan in the Gulf of Tongking for the use of the Chinese forces operating in Kwangsi. This measure appears to violate the Franco-Japanese Agreement of 1907, by which the two countries undertook to support each other in assuring the peace and security of Indo-China, Formosa and Korea. This was denied, however, by the Japanese authorities, who stated that the operation was merely for the purpose of exterminating the Chinese military forces in the island.

The Japanese advance up the Yangtze was resumed on 8th March, when their troops crossed the Han River in large numbers after taking Chungsiang. According to Chinese reports, the Japanese were using poison gas, with which they killed over a thousand Chinese. Further progress towards Ichang was checked by determined Chinese resistance and by strong counter attacks on a wide front. On 10th March, the Chinese claimed that they had forced the Japanese back across the Han River, North of Chungsiang and had captured many armoured cars and large quantities of ammunition.

Nanchang fell to the Japanese on 27th March, after severe fighting. The Chinese troops fired the city in accordance with the "scorched-

earth" policy of Marshal Chiang Kai-Shek and withdrew to the southward in an orderly manner. This success proved strategically fruitful for the Japanese, who were able to sever the Chekiang-Kiangsi railway. This artery has been of prime importance to the guerilla forces operating in Chekiang and its loss will handicap them severely.

In the early part of April, the Chinese made a remarkable recovery in the region of Canton, where they started a great counter-offensive on a 1,500 mile front. Having recaptured Tsengshing and Sheklung, they started an intensive drive against Canton itself. It is reported that the Japanese air force has evacuated the White Cloud aerodrome at that place.

This activity in Kwangtung has been accompanied by offensive operations by the Chinese in the provinces of Shansi, Hupeh, Hunan, Honan and Kiangsi.

IN THE AIR

The Chinese air force, which has been re-constituted, has shown considerable activity and has engaged the Japanese air force on several occasions.

On 6th February, in a raid on the Japanese aerodrome at Yunchen in Shansi, the Chinese claimed to have destroyed forty aircraft and to have burnt the hangers. Lanchow, an important nodal point on the motor-route from Russian railheads in Kazan via Sinkiang to Sianfu in Shensi has been the scene of fierce air fighting. On 12th February, Japanese aeroplanes raided both Lanchow and Sianfu and claimed to have shot down eighteen Chinese machines and to have destroyed twenty on the ground. Ten days later, further Japanese raids on Lanchow claimed the destruction of thirty-six Chinese aircraft. The Chinese reported, however, that they had shot down nine Japanese aeroplanes and had suffered a loss to themselves of only three pilots wounded. On 23rd February, Lanchow was again bombed by the Japanese, who claimed the destruction of fifty Chinese aeroplanes. The Chinese, for their part, asserted that they had destroyed six Japanese aircraft, making over thirty within a week. The Japanese estimate of Chinese aircraft destroyed over Lanchow was about 150. On 25th February, the Japanese raided Lanchow again and claimed to have shot down fifty-six out of sixty Chinese aircraft engaged. This intense air activity over Lanchow appears to afford proof of the reports that large quantities of war material have reached the Chinese along this overland route.

The Japanese perpetuated a fresh outrage against British interests in China on 21st February, when their aeroplanes flew across the British frontier near Shamchun in Hong Kong Territory and bombed a railway station and a train. A Sikh policeman and ten Chinese were killed. The

British Ambassador in Tokyo protested to the Japanese Government and received immediate assurances of their profound regret. The local Japanese Commander was ordered to apologise personally to the Governor of Hong Kong for the attack and the Japanese Consul-General agreed to pay compensation up to £1,250. The incident may, therefore, be considered as closed.

On 8th March, air activity was resumed against Sianfu, which was heavily bombed. Japanese aircraft again raided Sianfu on 9th and 15th March and killed about one hundred and fifty people. The English Mission Hospital and the Government offices were badly damaged.

Japanese aeroplanes carried out several destructive raids on Ichang in connection with their land offensive on the Han River. On 9th March, a series of raids by forty-five aeroplanes was reported to have killed 400 and wounded about 4,000 people in Ichang City.

CORRESPONDENCE

[Correspondence is invited on subjects which have been dealt with in the JOURNAL, *or which are of general interest to the Services. Correspondents are requested to put their views as concisely as possible, but publication of letters will be dependent on the space available in each number of the* JOURNAL.—EDITOR.]

OUR TRADITIONAL STRATEGY

TO THE EDITOR OF THE R.U.S.I. JOURNAL.

SIR,—Lieut.-Colonel Head says[1] that at Waterloo "in six weeks, with only military pressure, we did with complete success what had previously taken us twenty years to effect. Why should that not be our standard of traditional strategy?" And he goes on to say that "in the Great War we quite properly followed the Waterloo example."

As a matter of fact, the last thing we did in the Great War was to follow the Waterloo example. The French Revolutionary and Napoleonic wars lasted off and on for twenty-two years. Apart from the short and abortive expeditions to Toulon and Holland in 1794 and 1799, we kept out of the Continent altogether for the first fifteen years of the struggle, and although our Continental allies kept on getting knocked out by Napoleon, we did nothing to help them—and quite right too, because we should probably have been knocked out with them. Not till three years after Trafalgar did we send Wellington to Spain, and we probably should not have done that if Napoleon had not been so ill-judged as to try to cripple us with his Continental system. Even in Spain our military effort was definitely on the limited liability basis. We did not send a force to co-operate directly with our allies on the main Continental battlefields until the 22nd year of the struggle.

I fear that Lieut.-Colonel Head does not perceive the significance of that sequence of events. What we did was to keep our troops away from the main Continental theatre of war until the enemy had exhausted himself by twenty years of almost continuous warfare. Then we stepped in and delivered the *coup de grace* to an already tottering foe, and consequently did it in a mere six weeks and at trifling cost. The Napoleon who was beaten at Waterloo was not the recent victor of Austerlitz and Jena, but a returned exile, against whom the whole of Europe was united, who had already suffered defeat and been forced to abdicate, and whose Grand Army had just perished in the snows of Russia. In short, we waited to intervene until we were as nearly sure of an easy victory as it is humanly possible to be.

In 1914 we took exactly the opposite course and rushed over into the forefront of the battle at the beginning, instead of the end of the struggle, when the enemy was

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[1] See "Correspondence" in the JOURNAL of February, 1939, p. 184, and "The Doctrine of Limited Liability," by Captain H. M. Curteis, M.C., in the JOURNAL of November, 1938, p. 695.

at the fullness of his strength and fighting ardour. The not unnatural result was that instead of swift success in a few weeks, we lost a million men killed, practically ruined ourselves, and are still paying a war pensions bill of £40,000,000 a year after twenty years. We suffered these sanguinary consequences precisely because we did *not* follow the Waterloo example.

RUSSELL GRENFELL,
Captain, R.N.

15th February, 1939.

TO THE EDITOR OF THE R.U.S.I. JOURNAL.

SIR,—On page 232 of your last issue your reviewer of "The British Army and the Continent, 1904–1914" writes as follows:—

"Before the Boer War, it is safe to say, that a Campaign in Europe was scarcely one of the objects for which the British Army was maintained. It was the conclusion of the Anglo-French agreement in April, 1904 which raised the possibility of British Troops fighting on the Continent of Europe."

If this represents the present prevalent belief, it may perhaps be of interest to record that as long ago as 1888 (and probably much earlier) it was laid down in the strategical W.O. manuals issued to students at the Staff College that, as France had made her Eastern defences so formidable, any attack by Germany would be via Switzerland or Belgium, and that, owing to the difficulties of the former route, the latter would be most certainly chosen. Further that, as more than half a century earlier Great Britain had been one of the guarantors of Belgian neutrality, we should in such an eventuality be bound in honour to send an army to support her.

I can say definitely that, when I joined the Headquarters Staff some years before the outbreak of the Boer War, the possibility of having to assist Belgium in these circumstances was fully recognised as one of the duties that the British Army might be called on to perform.

F. S. ROBB,
Lieut.-General.

8th April, 1939.

ARMY RESERVE OF OFFICERS' TRAINING CENTRES

TO THE EDITOR OF THE R.U.S.I. JOURNAL.

SIR,—During the crisis of last autumn a common remark was: "Yes, I have got my warning order all right, but what shall I do when I get there? I do not know how to 'form threes,' much less anything else. I have not done a day's duty for umpteen years!"

No doubt the training of Reserve Officers is under consideration together with all the other urgent problems. Possibly the first suggestion will be that Reserve Officers should be sent to their units for periods of training. This is the system in force in India. The great advantages of it are that the Reserve Officer comes for a fortnight to the nearest suitable unit in his own district at a time convenient to himself and the unit. He works with troops at reasonable strength in a country where ground can still be found to train on. He may come at a time when he can get real value for the time and Government money spent, such as when Squadron or Company training is in progress, and he may be an officer who is capable of deriving full benefit by commanding a sub-unit. The disadvantages are that he may be anything from an experienced Major to a raw recruit. He comes alone. He really requires an

intensive course of individual training, which makes a very expensive call on the time of the unit's staff.

Even at home it must be waste of time for one or two officers to be given private tuition by a unit, and establishments are so low that few opportunities could be given them of actually commanding sub-units.

Here are a few suggestions as to what could be done for Reserve Officers at home. They must be put on the right lines as to what to study. If there are not troops for them to command, they must at least see the latest vehicles and weapons in use, if not on the ground, then in the cinema. They ought to have short intensive courses in the use of weapons, as was given during the War at schools. They must be periodically examined in their studies, for it is very easy to attend lectures, discussions, demonstrations, even courses, and make little or no progress. It is suggested therefore that Reserve of Officers' Training Centres should be organized by Commands. The Staffs for these centres would have to be very carefully selected from officers who are experienced instructors. Their aim should be to try and get as many Reserve Officers as possible up to the standard of modern promotion examinations. The professional "crammer" is still the greatest benefit to the serving officer, as he makes his work a whole time job; and he is a man of great experience. But Reserve Officers cannot be expected to go to crammers. They must have their own local qualified instructors, appointed by the War Office, and given all the latest manuals, pamphlets, amendments and maps.

It should not be difficult in London, for instance, for the training centre to organize lectures weekly in different parts, giving students home work to do. Occasional week-end outdoor T.E.W.T's. could be arranged. An annual three days course of demonstrations on Salisbury Plain, as given to the Indian Army officers home on leave would be of immense value. Enthusiasts who could spare the time would soon make rapid progress; busy men would have to do as much as they could. All this costs money, but the expenditure is imperative if the Army is to be expandable on mobilization to the proportions suggested by many authorities.

London.
20th October, 1938.

H. M. BURROWS,
Brigadier (Retd.).

P.S.—Since this letter was written it has been stated that one thousand Reserve Officers are to be invited to do a fortnight's training annually. This is all the more reason why measures as suggested above should be taken to "put them into the picture" before training.—H. M. B.

PAPER WORK AND EFFICIENCY

TO THE EDITOR OF THE R.U.S.I. JOURNAL.

SIR,—For reasons, which to record would be to insult, we do not build a 1939 aeroplane and fit it with 1914 controls: but in the construction of our 1939 Army we are less fastidious. This worries some of us; and in *The Fighting Forces* for June, 1938, we find an article entitled "Strangulation of Efficiency," by Lieutenant M. P. Huthwaite. This was followed up by Major P. R. Dauban with "Simplification and Reduction of Regimental Paper Work," which appeared in the November number of the R.U.S.I. JOURNAL. Major Dauban differs with Lieutenant Huthwaite when tracing cause, but recognizes the same effect—strangulation. No one could quarrel with the conclusion reached by these two officers; but surely the cause is not, as Major Dauban states, "a complicated system" from which we all suffer.

The system is indeed far from perfect and many of Major Dauban's suggested "remedial measures" are excellent; but the successful treatment of a headache is of little consequence if there lurks a major disorder awaiting a correct diagnosis.

Development in the Services follows fast at the heels of scientific inventions which have been made in the general progress of industry, commerce, and the many other forces at work in an ever advancing world; and many a military writer has stressed the importance of the Services keeping in step with the march of civilization. But false economy has forced us out of step. Any up-to-date business firm has a fleet of modern typewriters, telephones, dictaphones, and other office instruments. The machinery for business staff organization has increased output and enabled a reduction to be made in personnel. But do we follow this example in our Army office organization? Few officers can dictate a letter, and less than 50 per cent. of the clerks are trained in shorthand; dictaphones are almost unheard of in the Army, and there is an inadequate supply of typewriters Most military offices consist of tables covered with baskets marked IN, OUT, and PENDING. These baskets overflow with files which must go somewhere but cannot go quickly because the machinery to effect their rapid departure is lacking. Certainly modern office instruments and trained stenographers are expensive, but a host of 'woolly' clerks and harassed staff officers is a luxury in comparison—that is, from the Treasury Office aspect.

We study strategy and we bleat about the importance of the time factor, and yet we allow our staff work to be hampered by an odd affection for 1914 office machinery, with consequent delays and muddles which, in war, would be fatal. We have reduced the number of men behind our bullets; let us now reduce the number of pens poised above our office minute sheets!

"INKPOT."

INFANTRY WEAPONS

TO THE EDITOR OF THE R.U.S.I. JOURNAL.

SIR,—In your issue of August last, on page 631, a correspondent using initials "P.B.I." wrote on the subject "Infantry Weapons." He advocated "... and finally, to give him effective fire power up to the necessary range of 300 yards, he should have an automatic pistol of the German Mauser variety."

I know the military views on the value of rifle-fire power and respect the Short Lee-Enfield rifle as a precision weapon, but it has serious limitations under restricted conditions and normally calls for the entire use of one hand and arm in carrying, and both hands and arms in use. When carried slung, it is slow to bring into action.

During my service I longed for an arm of the Mauser pattern. I have not been able to find this type in any arms collection; but I believe it had a 12-in. barrel, magazine capacity of fifteen rounds, could be carried holstered, used with one hand, and required loading only one-third as frequently as the rifle. For use from a tank, armoured car, trench, or in street, house-to-house, or open fighting, it would prove as effective and far less monopolising than the rifle.[1]

13th March, 1939. "511917."

[1] In the Institution's Collection of Small Arms there is a Mauser with a 12-in. barrel and a magazine to hold *fifty* rounds.—EDITOR.

THE FUTURE OF THE AIRSHIP

SIR,—I have just seen Lieutenant Beaumont's letter replying to my article on "Airships."[1]

I quoted Air-Commodore Maitland's figures and compared them with the early 1938 figures of Imperial Airways deliberately in order to prove that the slower airship does not take much longer than the much faster aeroplane on these long routes. The reason is, of course, that the airship can fly non-stop and, owing to its great fuel reserve, can often be manœuvred so that it flies with, instead of against, the wind.

Lieutenant Beaumont says that Air-Commodore Maitland's figures suppose a cruising speed of 75 m.p.h., and the cruising speed of the latest Zeppelins is now in the region of 80 m.p.h. As the Zeppelins fly from Frankfurt to Lakehurst, I took the time from Ireland to New York in order to get some sort of comparison. The average East to West Zeppelin time was rather under 70 hours, and the shortest coast to coast passage some 16 hours (West to East), and this last figure compares well with the flying-boats' 12 hours. It must be remembered that these Zeppelin flights were truly commercial, and run to a time-table published weeks ahead; each carried some fifty passengers and about ten tons of baggage, whilst the flying boats' pay load was only some 3,000 lbs., if I remember aright. The Zeppelin, too, came within 75 or 80 per cent. of making a profit on those ten flights, and this without the huge subsidy all commercial heavier-than-air craft seem to require.

The airship's role in peace time is to carry passengers in comfort, and mails, etc., in commercial quantities over long distances, whilst the heavier-than-air craft should be used as feeders for the airship.

From a Service point of view, the small and medium sized non-rigid is the ideal craft for escorting convoys, and guarding them from mines and submarines, whilst the big rigid acts as an aircraft carrier and a strategic scout far away from land.

VENTRY.

15th February, 1939.

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[1] See JOURNAL for May, 1938, p. 262.

GENERAL SERVICE NOTES

GOVERNMENT POLICY AND THE DOCTRINE OF LIMITED LIABILITY

Speaking in the House on Tuesday, the 21st February last, Mr. S. Morrison, Chancellor of the Duchy of Lancaster, who since the appointment of Lord Chatfield to be Minister for Co-ordination of Defence represents that Department in the Commons, said that the question had been raised about the part the Army should play if we should unhappily be engaged in a Continental war. The Government agreed . . . that once involved in war we could not proceed upon the principle of limited liability. All our resources would have to be thrown in, and the only question which would arise was how they could be most effectively used. . . .

Mr. Churchill advocated that the contacts with France should be as intimate and as close as possible. He (Mr. Morrison) had no difficulty in giving him the assurance for which he asked. The conversations had already been begun between their respective staffs and would be continued. They would naturally cover the respective roles and services in the first stage of a war.

STATEMENT RELATING TO DEFENCE

A Statement relating to Defence was published as a White Paper[1] in February of this year (1939). It announced the Government's intention of seeking powers to borrow a further £400 millions towards the cost of defence, explained the necessity for this expenditure, and reviewed the progress made in reconditioning and modernizing the fighting Services.

It recalled that in a Statement issued in February 1937[2], mention was made of the cost of the programme as it then stood, and that "it would be imprudent to contemplate a total expenditure on Defence during the five years April 1937 to March 1942 of much less than £1,500 millions. In a Statement issued in March of the following year,[3] it was remarked that this sum would probably be exceeded.

The issue of a further £400 millions will make £800 millions towards the total cost of this five-year programme. It is intended to extend the scope of the service to which this loan may be applied so as to include Civil Defence.

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[1] Cmd. 5944. 1939. (H.M. Stationery Office.) 3d.
[2] Cmd. 5374, summarized in the JOURNAL of May 1937.
[3] Cmd. 5682, summarized in the JOURNAL of May, 1938.

COST OF THE DEFENCE PROGRAMMES

The expenditure of the three Service Departments for 1937 was approximately £262 millions. In the current financial year (1938) the corresponding total (including projected Supplementary Estimates) is about £388 millions. In the financial year which starts on the 1st April, 1939, the Estimates for the three Service Departments, which will be published in the course of the next fortnight, will be some £523 millions. The total expenditure on Defence in the first three years of the quinquennium thus amounts to over £1,173 millions.

The expenditure on Air Raid Precautions amounted to £3½ millions in 1937. For the year 1938–39 it is estimated to reach £9¼ millions, while for the year 1939–40 the estimate is £42 millions (exclusive of assistance to vital public utility services and water for emergency fire-fighting purposes, estimated at £9 millions). Expenditure on storage of food, fertilisers and petroleum amounting to £8½ millions was incurred in 1938, and the Estimates for 1939 make provision for £5 millions. Having regard to the magnitude of the sums involved, and also to the fact that much of the expenditure under these heads can be regarded as of a capital nature, His Majesty's Government have reached the conclusion that it is desirable that the scope of the services to which borrowed moneys may be appropriated in aid should be extended to include Civil Defence requirements, such as Air Raid Precautionary services, Emergency Hospital organization and Food Reserves.

Of the borrowing powers conferred by the Defence Loans Act, 1937, approximately £65 millions were used in 1937, and it is estimated that approximately £132 millions will be used in the current year. Thus, of the original borrowing powers conferred, £197 millions have been used and £203 millions remain.

The total Defence expenditure in 1939, including expenditure on Civil Defence, will be in the neighbourhood of £580 millions. That figure exceeds the current year's expenditure, after taking into account Supplementary Estimates, by some £175 millions, and exceeds the portion of the current year's Defence expenditure to be met from revenue by some £307 millions. It is clear that the available revenue and the unexhausted borrowing powers conferred by the Act of 1937 will not meet the total Defence expenditure to be incurred in 1939, and that it will be necessary to make some use in 1939 of the increased borrowing powers now asked for.

In brief, the position may be summarized as follows. The earlier stages of the programme have now been completed. Industrial capacity has been largely increased, new models have been designed and tried out, and are in production. The initial difficulties met with in any large programme of production have been largely overcome. All three Service Departments are now receiving armament stores of all kinds and of the latest models, in very large quantities, and production will continue on an increasing scale. The extent of the programmes and the expenditure thereon in the ensuing years of the re-armament programme must, however, be determined by our own Defence needs, judged in the light of the world situation. While, therefore, the measures of acceleration which have been undertaken have contributed to the extent of the Defence

expenditure to be incurred in the ensuing financial year, it is at present impossible to predict how soon the needs of the situation will permit of a slowing down of the production of armaments.

It should be added that, while the programmes have been planned with a view to securing an adequate supply of armaments required for our own defensive needs, suitable arrangements have been made to secure that the programme could be effectively adjusted in the light of any improvement in the international situation, with due regard to the interests of the Exchequer.

Reasons for Increased Cost

The Statement then gives the reasons for the increased cost of the programmes. One factor which, it says, has led to increased expenditure is the ever-increasing complexity of modern armaments. The ingenuity of the inventor is for ever resulting in new devices and improvements which, while they add to the effectiveness of the weapons in question, also add appreciably to the cost. Every effort is, however, being made to ensure that designs are, so far as possible, simplified and rendered suitable for large-scale production.

The main reason, however, for the substantial increase in expenditure lies in the extent to which it has been necessary to enlarge the original programme in order to make adequate provision for defence against the contingency of air attack. The Air Estimates for 1939 exceed £200 millions. The heavy rate of expenditure on the Royal Air Force is, of course, mainly accounted for by the very large number of modern aircraft now coming into the squadrons, as a result of the increased manufacturing capacity and the improved production arrangements now in operation. It should be added that, notwithstanding the measures which are being taken to reduce the number of types, and to simplify production, the cost of aircraft which embody the latest improvements in design and technique, and give greatly improved performance, is necessarily much heavier.

In addition to expenditure on the manufacture of new air-frames, engines, equipment and stores of all kinds, heavy capital expenditure is still being incurred on providing additional manufacturing capacity, and on the construction of new stations. As regards the latter, in the current year a large programme of works services has been undertaken. Work has been started on thirty-seven new stations, including Operational Stations, Flying Training Schools, Technical and Armament Training Schools and Maintenance Units. At a number of established aerodromes temporary hutments are being replaced by permanent structures so as to give improved accommodation, and enable better use to be made of existing facilities.

As an essential counterpart to the increase in the Air Force, our active ground defences against air attack have been substantially increased. Very substantial progress has been made with the original programme of new anti-aircraft guns and searchlights. Meanwhile further orders have been placed, which will have the effect of greatly strengthening our anti-aircraft defences, and steps have been taken to increase the manufacturing capacity for guns.

The programme under this head includes a large number of new drill halls and mobilization and equipment stores, many of which are now completed or approaching completion. The original programme for the balloon barrage has likewise been extended.

Civil Defence measures involve very substantial expenditure, the chief heads of which are: respirators and protective clothing and equipment for Air Raid Precautions personnel; fire-fighting appliances, steel shelters and the strengthening of basements; storage of food and other essential commodities; and the special measures to be taken by electricity, gas and water undertakings and by the railway companies.

THE NAVY

Material

The needs of the Navy in regard to new construction were set out in the 1937 Statement.

The speed with which the strength of the Royal Navy is now being increased is shown by the following table of tonnage building at successive dates—

January 1, 1935	139,300
January 1, 1936	291,900
January 1, 1937	375,700
January 1, 1938	547,000
January 1, 1939	544,000
March 31, 1939 (expected)	659,500

During the forthcoming financial year some sixty men-of-war are expected to be added to the Fleet, at a total tonnage of about 120,000. In addition, miscellaneous vessels of a tonnage of about 25,000 will be added.

A comparison of our present shipbuilding effort with that of the years before the Great War shows that the average annual tonnage of the principal classes of warship, excluding submarines, completed during the three financial years 1911, 1912, 1913, was 170,000. The corresponding average for the tonnage expected to be completed during the two years 1940 and 1941 is 219,500. In comparing the present rate of shipbuilding with pre-war years, it is, however, necessary to take account of the increased complexity of the modern warship, and of her armament and equipment.

Two capital ships were included in the New Construction Programme for 1936, three in 1937 and two in 1938. It is proposed to include another two in the 1939 Programme, so that altogether there will be nine of these vessels under construction. It is also proposed to include in the naval building programme for 1939 two destroyer flotillas, and twenty fast escort vessels of a new type intended for the protection of shipping against submarine and air attacks. Provision will also be made for the building of another aircraft carrier (making six in all under construction, excluding the *Ark Royal* which has now been completed and is in commission), four large 6 in. gun cruisers, and some smaller vessels.

Modernization of existing capital ships is proceeding steadily, and three ships are at present in hand for this purpose. Great progress has been made in strengthening the anti-aircraft armaments of other ships of the Fleet.

Personnel

The mobilization of the Fleet, and partial mobilization of the Air Defence Organization, in connection with the crisis last September, afforded a practical test of the machinery for calling up the Reserve and Auxiliary personnel of the Services. The test was highly satisfactory, and it is gratifying to be able to record that the personnel concerned responded to the call with great readiness and alacrity. The machinery has been improved as a result of the experience gained.

The lowest total of naval personnel in recent years was 89,214, in 1932. Since that date the total of naval personnel has been steadily increased. The following table shows the numbers borne at the end of each financial year, and the increase as compared with the preceding year :—

		Increase
1933–34	90,295	1,081
1934–35	91,927	1,632
1935–36	97,312	5,385
1936–37	101,868	4,556
1937–38	111,810	9,942
1938–39 (numbers voted) ..	119,000[1]	7,190[1]

In the six years 1933–38, the personnel of the Fleet will thus have been increased by 32,000, an increase of 36 per cent. The increase contemplated during the financial year 1939, including an increase of 4,000 required in the Fleet Air Arm, is 12,000 It is also anticipated that during the next financial year a very considerable expansion will take place in the Naval Reserves, including the creation of new R.N.V.R. Divisions primarily for the purpose of giving training in anti-aircraft work.

The number of recruits entered, which in 1931 was just over 3,000, was in 1935 over 8,000 ; in 1936 it was 11,500 and in 1937 it was nearly 16,000. During the first three quarters of 1938 over 11,000 recruits have been raised.

Organization

Fleet Air Arm.—It is anticipated that the aircraft for the Fleet Air Arm, together with the necessary stores and equipment, will be transferred from the control of the Air Ministry to that of the Admiralty early in the new financial year. The Air Ministry will, however, continue for the time being to be responsible for the maintenance and repair of aircraft of the Fleet Air Arm on an agency basis. In accordance with the terms of the decision of His Majesty's Government on the transfer of administrative control to the Admiralty, the Air Ministry will remain responsible for the supply of material for the Fleet Air Arm, as well as for research and development services. To meet the require-

[1] Now being increased by 2,000 in consequence of Fleet Air Arm expansion.

ments of the expansion programme, substantial orders have been placed for aircraft of the various types for delivery over the next two or three years.

Under measures initiated during 1938, additional personnel totalling some 2,000 will have been added to the Fleet Air Arm before the close of the year, and in 1939 an increase of 4,000 is contemplated. This additional personnel is being found by transfers from the Fleet and from the R.A.F., as well as by new entries from outside sources. For some time to come, however, the Fleet Air Arm must continue, particularly as regards flying personnel and skilled ratings for maintenance duties, to depend largely upon personnel lent from the R.A.F., or trained at R.A.F. establishments.

Under the arrangements now being introduced, while the Air Ministry remain responsible for general flying training of the Fleet Air Arm pilots, the Admiralty will shortly assume responsibility for specialised naval training. For this purpose, for the training of disembarked squadrons, and for the repair and maintenance of aircraft that cannot be undertaken afloat, shore bases are required. Arrangements are being made with the Air Ministry for the Navy to take over certain R.A.F. shore stations early in the forthcoming financial year. These will not, however, be sufficient to meet requirements, and it will be necessary to make up the deficiency both by the construction of new bases and by the use of R.A.F. stations on a shared basis.

THE ARMY

Material

The re-equipment of the Army with up-to-date weapons and the accumulation of the approved scale of war reserves is proceeding rapidly. Substantial deliveries are now being received and production of many items has reached the stage when completion is in sight. Provision of additional anti-aircraft equipment has been put in hand. Large extensions of manufacturing capacity have now become effective and further extensions of manufacturing capacity will come into operation this year.

Work on the large programme for the construction of new Royal Ordnance Factories (including factories for the manufacture of explosives, and for filling shells and bombs) which was taken in hand at the outset of the programme has been accelerated.

Personnel

During 1938, 37,323 recruits joined the Regular Army. This was 12,753 more than joined in the previous year and constituted a record for post-war normal recruiting. The enlistment and training of boys as artificers, specialists, etc., has been, and is being largely expanded. A new school has already been established at Jersey and further new schools are in course of preparation at Chatham and Arborfield. It is hoped to have over 4,000 boys under training by the end of the year. A new section E of the Regular Army Reserve has been created to provide a pensioner reserve of Warrant and Non-Commissioned officers whose services can be utilized on mobilization as instructors at training and similar establishments.

The number of candidates from all sources—schools, universities, Supplementary Reserve and Territorial Army—for commissions in the Regular Army now greatly exceeds the demand. This is a complete reversal of the situation two years ago, when it was impossible to fill the number of vacancies offered.

Better terms for pay and pension have been instituted; a new class of Warrant officers (Class III) has been established. This offers a further opportunity to other ranks to rise to positions of responsibility in command. Warrant officers (Class III) are now commanding sub-units previously commanded by Subalterns.

1938 was an exceptionally good recruiting year in the Territorial Army. 77,142 recruits joined, compared with 45,320 in the previous year. This is the largest number of recruits ever entered in a single year. The strength of the Territorial Army is nearer its establishment than at any time in its history. Several divisions (five out of eighteen) are over establishment, and the average for all divisions is over 90 per cent. of establishment. The increase in establishment consequent on the increase in the number of anti-aircraft divisions calls for a continuance of active recruiting for the Territorial Army. In 1939 over 100,000 are estimated to be required to meet the increase in establishment and to replace wastage.

Organization

The comprehensive reorganization of the Regular Army, on the lines described by the Secretary of State for War in his speech introducing the Army Estimates in March last, has proceeded.

The number of anti-aircraft divisions of the Territorial Army has been increased from two to five, and the whole organized into an anti-aircraft Command under a Corps Commander. Parallel with this re-organization of the force, a new directorate was established in the War Office under the control of a Deputy Chief of the Imperial General Staff for coast defence and anti-aircraft. In this directorate are centred all questions regarding training and organization of the anti-aircraft and coast defence.

The Field Force portion of the Territorial Army has been reorganized to conform with the Regular Army. Not only have all arms been reorganized but units which have no counterpart in the Regular Army, such as motor cycle battalions, have been formed. The higher organization has been thoroughly overhauled, and in place of the former twelve divisions, there are now nine infantry divisions, three motor divisions, and mobile brigades which can be organized into a mobile division in war. In addition some horsed units are being retained to meet special conditions encountered in certain possible theatres of war. The Auxiliary Territorial Service for women has also been inaugurated and organized, and recruiting is proceeding satisfactorily.

THE ROYAL AIR FORCE

Material

During the past year various measures have been taken to broaden the basis of production in order to increase and accelerate the programme, including

provision of the necessary reserves. The system of erecting factories at Government expense, to be managed for and on behalf of the Government by business firms with experience of quantity production, has been extended ; and similar arrangements have been made for the erection of new factories and extensions to existing factories by firms in the aircraft industry.

In the early part of the year a special procedure was adopted in order to expedite the placing of the large orders required for the programme, so as to enable constructors to make their plans and order raw material well in advance. It was also decided that part of the additional volume of orders should be placed with manufacturers having capacity which would be of value in aircraft production, and who controlled large bodies of skilled labour. Accordingly the aircraft industry was required to sub-contract with such firms a large proportion of the orders received. In addition, the help of large engineering organizations controlling, or in association with, a number of subsidiaries has also been enlisted. The method to be adopted in this latter case is for the principal firm to arrange for the production of airframe components in the various allied factories and to undertake their assembly in a central factory to be erected at Government expense.

Steps have also been taken with a view to building up manufacturing capacity in the Dominions. Contracts have already been placed in Canada for large bomber aircraft and fighter aircraft, and a Mission is now in Australia, by invitation of the Commonwealth Government, with a view to concerting action with that Dominion. This Mission will also visit New Zealand. Orders for the supply of general reconnaissance and training aircraft have been placed in the United States of America.

In the course of the current financial year the monthly rate of delivery of aircraft to the Royal Air Force has been more than doubled, and will show further substantial increases.

Personnel

The number of recruits required for the Air Force during the financial year ending the 31st March, 1939, was by far the largest for any single year since 1918. The programme involved the entry during the year of some 31,000 officers, men and boys, including 1,700 pilots, and present indications are that the actual entry may reach 35,000. An entry of the order of 20,000 will be required for the regular force during 1939, and it is therefore essential that a steady flow of recruits of the high quality which was attained during 1938 should continue. A scheme for direct recruitment of air observers has been in operation since August 1938, to meet the increased demand for air crews.

Training facilities of all kinds have been extended. There are now twelve Service Flying Training Schools and three more will shortly be opened in Scotland, while flying training both for the Royal Air Force and the Royal Air Force Volunteer Reserve is now being carried out at over thirty civil flying schools.

At the beginning of the current financial year the Royal Air Force Volunteer Reserve comprised a section for pilots and a section for medical officers. An

additional air section for air crews has been formed, together with ground sections, both for officers and men, corresponding to the different branches and trades of the regular Air Force. Over 2,500 volunteer reservists are now being trained as pilots. Recruiting for most of these new sections was opened in connection with the National Service Appeal in January, and a large number of applications have been received. In order to secure the services in emergency of men who already had Air Force experience, a special scheme of entry into Class "E" of the Reserve was introduced in July last for ex-airmen and pensioners of the Royal Air Force.

Organization

The strength of the Metropolitan Force has been increased both as regards number and power of aircraft: by the 31st March, 1939, the number of first-line aircraft will have been raised to the figure of 1,750 for which the programme due for completion at that date provided. This was extended by the programme announced in May, 1938, for a Metropolitan first line strength of approximately 2,370 aircraft, an overseas strength of 500, and the completion of the expansion of the Fleet Air Arm. Further, as announced by the Secretary of State for Air in the House of Commons on the 10th November, 1938, His Majesty's Government has decided on steps which would further increase and accelerate the programme. During 1939 the expansion of the Royal Air Force will be continued in accordance with these announcements.

The balloon barrage scheme, which was started last year, has now been extended to the provinces, and comprises 47 squadrons. A separate Command has been formed for the administration and training of these units, although for operational purposes they will remain under the control of the Air Officer Commanding-in-Chief, Fighter Command, who is responsible for Air Defence as a whole. The balloon squadrons form part of the Auxiliary Air Force and are recruited locally. Recruitment for the provincial units began last month.

CIVIL DEFENCE

Following the crisis of September, 1938, it was decided that the planning of Civil Defence, the co-ordination of the work of the various Departments concerned and the organization of National Service in time of war, required the whole time attention of a Minister of Cabinet rank. A Minister for Civil Defence, holding the office of Lord Privy Seal, was accordingly appointed in November, 1938. The Lord Privy Seal is responsible for the co-ordination of policy on all aspects of Civil Defence. In addition, he has direct executive responsibility for the work of the Air Raid Precautions Department of the Home Office.

The Statement then describes the responsibilities and organization of the Air Raid Precautions Department and its relations with other Ministries.

Particulars are given of the campaign for Voluntary National Service and its progress to date.

Measures taken in connection with Air Raid Precautions are enumerated, including personnel, steel shelters, permanent trenches, hospitals, evacuation, fire precautions, respirators, sandbags, transport, etc.

CONCLUSION

The Statement concludes :—

"It is everywhere recognized that our armaments have no aggressive purpose. His Majesty's Government deeply deplore the need for the expenditure of these vast sums on armaments. They have already indicated that, when other nations are prepared to consider some arrangement for limitation of armaments, this country will be prepared to play its part. But in the absence of a general reduction of armaments it is inevitable that this country should continue to take the steps necessary, in the light of present developments, for its own protection and for the discharge of its responsibilities elsewhere. . . . His Majesty's Government are pressing forward with the programmes outlined in this paper. They are confident that the people of this country will be ready to bear the heavy burden involved, and will share the determination of His Majesty's Government to ensure the adequacy of our Defence preparations."

NAVY NOTES

GREAT BRITAIN

The Royal Visit to Canada

In view of the possibility of Their Majesties' arrival at Quebec being delayed by weather conditions, the King has decided to leave Portsmouth in H.M.S. "Repulse" on Saturday, 6th May, instead of on Monday, 8th May. Their Majesties are due to disembark at Quebec at 9.30 a.m. (E.S.T.) on Monday, 15th May.

They will cross Canada to the Pacific Coast, arriving at Victoria, B.C., on 29th May and leave on the 31st by a different route for the Niagara Falls, where they are due on 7th June. The four days from 8th to 11th June will be spent in the United States on the invitation of the President and Mrs. Roosevelt.

Resuming their tour of Canada, the King and Queen will arrive at Halifax on the forenoon of 15th June, and leaving in H.M.S. "Repulse" the same evening, will arrive at Portsmouth on 22nd June. The cruisers "Southampton" and "Glasgow," of the Second Cruiser Squadron, will act as escort during both voyages.

Visit of the French President

The President of the French Republic and Madame Lebrun, on the occasion of their State visit, crossed from Calais to Dover in the s.s. "Cote d'Azur" on 21st March. They were met in mid-Channel by the 5th Destroyer Flotilla under the command of Captain L. Vaughan Morgan in the "Exmouth," and by aircraft of the Royal Air Force. At Dover there were present the battleship "Rodney" and the Second Cruiser Squadron ("Southampton," "Newcastle," "Sheffield," and "Glasgow") under the command of Rear-Admiral G. F. B. Edward-Collins.

Honours and Awards

The London Gazette of 28th February, 1939, announced that the King had been graciously pleased to give orders for the promotion of Admiral Sir Reginald Guy Hannam Henderson to be "an Ordinary Member of the Military Division of the First Class, or Knights Grand Cross" of the Most Honourable Order of the Bath.

This high distinction has doubtless been conferred as a recognition of Admiral Henderson's exceptionally valuable work as Third Sea Lord and Controller of the Navy, which appointment he has had to give up on account of ill health.

The Navy Estimates

The Navy Estimates for 1939–40 were presented to Parliament on 28th February. They amount to £147,779,000. This compares with £125,307,500 in the original and supplementary estimate for 1938—an increase of £22,471,500. In addition the sum of £1,620,000 is required in 1939 for the service of previous issues from the Consolidated Fund under the Defence Loans Act, as compared with £810,000 in 1938.

The total provision thus required in 1939 is £149,399,000, compared with £126,117,500 in 1938, an increase of £23,281,500. Of this total, it is proposed to meet £80,000,000 from borrowed money against £30,000,000 in 1938. It follows that £69,399,000 will require to be met from revenue in 1939 against £96,117,500 in 1938—a decrease of £26,718,500.

The largest element in the increase over last year's Estimates is on account of new construction. Apart from the bigger provision for work on this year's larger programme, which is being started earlier in the financial year, this increase is due

to the fact that the three programmes of 1936, 1937, and 1938 are now at a stage at which the heaviest expenditure is being incurred on them.

The new construction programme of 1939 is :—

2 Capital ships.
1 Aircraft carrier.
4 Cruisers.
2 Flotillas of destroyers.
4 Submarines.
20 Fast Escort vessels.
2 Escort vessels (normal type).
10 Minesweepers.
1 Fast Minelayer.
1 Depot ship for motor torpedo-boats.
1 River gunboat.
1 Hospital ship.
6 Motor torpedo-boats.
2 Boom defence vessels.
1 Fleet Target Service tug, and a number of miscellaneous small craft.

In the principal categories of ships, this programme is larger than that of 1938 by two destroyer flotillas, 20 fast escort vessels of a new type, and 10 minesweepers. A new hospital ship is included, in replacement of the old vessel "Maine," which has passed the limit of her economical life.

Provision is also made for the commencement of work on a new Royal Yacht in place of the "Victoria and Albert," which was completed in 1901 and is long since overdue for replacement. The King has expressed a wish that the new vessel should be so designed that she could be made available as an additional hospital ship in the event of war.

Vote A (numbers) provides for 133,000 officers and men, as compared with 119,000 in the 1938 Estimates, and with 146,500 in the Supplementary Estimate of 14th November, 1938, to cover the additional numbers borne during the mobilization in September.

Considerable work has been done to enable the defensive arming of merchant ships on the outbreak of war to be effected rapidly. The provision for work of a constructional character in such ships to meet requirements in case of an emergency is increased from £60,000 to £410,000.[1]

Vote 4, on which most of the expenditure for the Fleet Air Arm was formerly borne, no longer appears in the Estimates. The cost will be absorbed into the normal Navy votes. Altogether the expenditure on the Fleet Air Arm in 1939 will be £11,750,000—about double that of last year.

Considerable time has been devoted to detailed investigations of the claims put forward recently in favour of a return to coal burning in warships. These investigations have proved conclusively that, on the major counts, weight and space required and operation, a return to coal burning would impose such a handicap on our ships as to be definitely unacceptable. With a view to widening the field of supply of fuel oils, trials have been carried out on fuels from alternative sources.

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[1] In an address to the Constitutional Club on 23rd March, the First Lord said that they were doing "a tremendous work in the dockyards in . . . the strengthening of the decks of ships of the mercantile marine so that they could take anti-submarine and eventually anti-aircraft guns." They hoped that by the end of the year a thousand ships would have been dealt with.

Statement in Parliament

The Estimates were introduced in the House of Commons on Thursday, 16th March, by Mr. Geoffrey Shakespeare, Parliamentary Secretary. Following are points from his speech:—

It has been decided to replace one of the "Royal Sovereign" class in 1942 by the last ship of the 1937 programme, that is, when five new capital ships have joined the Fleet, and one in 1943 by the last ship of the 1938 programme. Capital ship strength by the end of 1943 will be 21.

The 20 new escort vessels will be of about 900 tons displacement, of high speed and with armament designed to meet submarine and aircraft attack. This type will be constructed in the shortest possible time. Delivery should have started in May, 1940. To the existing 35 escort and patrol vessels will be added 36 destroyers and 16 cruisers converted for A/A work.

The output of heavy guns has increased twenty-fold and of medium and light guns by five and eight times respectively. Only three firms capable of producing fire-control gear existed three years ago; to-day there are twenty-eight. Capacity has increased ninefold.

A total of 27,000 refugees of fifty-five different nations have been evacuated in British warships from Spain, and 100,000 Spaniards of both sides have reached safety under British naval protection.

We shall be ready to institute a convoy organization soon after the outbreak of war on any route where it is considered necessary. Over 9,000 officers of the Merchant Navy have attended courses in convoy protection or gunnery.

Our methods of detecting, hunting and killing submarines are more advanced than any others in the world. The Navy is also provided with a maximum of protection against air attack. If faced with the choice, he would choose to remain in a battleship which was being bombed rather than in an aircraft bombing a battleship.

Whereas in 1937 only 50 officers and 48 men were entered for flying training for the Fleet Air Arm, in 1938, 507 officers and 206 men were being entered. Some 1,300 naval maintenance personnel are now under training, of whom 700 had been recruited from civil life.

Supplementary Estimate for 1938

The crisis in September last cost the Navy £1,766,000. This amount was included in a supplementary estimate issued on 5th March for a nominal £100, as the greater proportion of the cost is being borrowed.

Other requirements enumerated bring the total cost to £2,280,000, of which £529,900 is being met from savings. The net sum required is therefore £1,750,100 towards which £1,750,000 has been appropriated from loans.

Flag Appointments

First and Principal Aide-de-Camp.—Admiral the Hon. Sir Reginald A. R. Plunkett-Ernle-Erle-Drax, K.C.B., D.S.O., was appointed First and Principal Naval Aide-de-Camp to H.M. The King in succession to Admiral Sir Roger R. C. Backhouse, G.C.B., G.C.V.O., C.M.G., to date 1st April, 1939.

Vice-Admiral and Rear-Admiral, United Kingdom.—The King has been pleased by Letters Patent under the Great Seal of the Realm bearing date 6th February, 1939, to grant unto Admiral Sir Montague E. Browning, G.C.B.,

G.C.M.G., G.C.V.O., the office or place of Vice-Admiral of the United Kingdom and Lieutenant of the Admiralty thereof, in the room of Admiral the Hon. Sir Stanley C. J. Colville, G.C.B., G.C.M.G., G.C.V.O.; and unto Admiral the Hon. Sir Hubert G. Brand, G.C.B., K.C.M.G., K.C.V.O., the office or place of Rear-Admiral of the United Kingdom and of the Admiralty thereof, in the room of Admiral Sir Montague Browning.

THIRD SEA LORD.—The King has approved the appointment of Rear-Admiral Bruce A. Fraser, C.B., O.B.E., to be a Lord Commissioner of the Admiralty and Controller, in succession to Admiral Sir Reginald Henderson, K.C.B., to date 1st March, 1939.

PORTSMOUTH COMMAND.—The King has approved the appointment of Admiral Sir William James, K.C.B., to be Commander-in-Chief, Portsmouth, in succession to Admiral of the Fleet the Earl of Cork and Orrery, G.C.B., G.C.V.O., to date 30th June, 1939.

BATTLE-CRUISER SQUADRON.—The appointment has been approved of Rear-Admiral William J. Whitworth, C.B., D.S.O., to be Rear-Admiral Commanding Battle-Cruiser Squadron, to date about June, 1939.

GIBRALTAR DOCKYARD.—The appointment has been approved of Rear-Admiral Norman A. Wodehouse, C.B., to be Rear-Admiral in Charge and Admiral-Superintendent, H.M. Dockyard, Gibraltar, in succession to Rear-Admiral Alfred E. Evans, C.B., O.B.E., to date 28th April, 1939, and to assume command about 24th May, 1939.

SECRETARY TO FIRST LORD.—The King has approved the appointment of Rear-Admiral Stuart S. Bonham-Carter, C.V.O., D.S.O., to be Naval Secretary to the First Lord of the Admiralty, in succession to Rear-Admiral William J. Whitworth, C.B., D.S.O., to date 1st May, 1939.

FLAG RETIREMENT

Rear-Admiral Stephen St. Leger Moore, C.B., C.V.O., has been placed on the retired list, to date 8th March, 1939.

FLAG PROMOTION

Captain John H. Godfrey, C.B., A.D.C., has been promoted to Rear-Admiral in H.M. Fleet, to date 22nd February, 1939, and reappointed in his present appointment (Director of Naval Intelligence) on promotion.

PERSONNEL

EMPLOYMENT OF RETIRED OFFICERS.—The Admiralty are prepared to consider applications for re-employment for home service from Lieutenants and Lieutenant-Commanders on the Retired and Emergency Lists. Officers under the age of 40 will be preferred. Employment may be expected to be for three years in the first instance. Officers will receive the full pay of their rank on the Retired List, with a bonus of 15 per cent., as well as allowances for Active List officers. Retired pay will be suspended.

RETIRED OFFICERS' LIABILITY.—All officers on the Retired and Emergency Lists of the R.N. and R.M., and officers on the Active and Retired Lists of the R.N.R. and R.N.V.R., are under a continuous liability for naval service, if required, on mobilization. A number of such officers are employed in the Admiralty and in naval establishments in a civil capacity. Unless information is received to the contrary, it is assumed that these officers are immediately available for naval service on mobiliza-

tion, if required. Applications for exemption from naval service of such officers on the ground that they cannot be spared from their civil duties should be put forward in peace time before mobilization, and will not be entertained in time of emergency when mobilization is expected or has been ordered.

EXPANSION OF OFFICERS LISTS.—Admiralty Fleet Orders dated 9th March, 1939, contained particulars of measures approved to increase the numbers of junior executive officers, to meet the prospective expansion of the Fleet.

TRANSFER FROM R.N.R.—Further commissions in the Royal Navy are being offered to candidates on the Active List of the R.N.R. who hold the ranks of Lieutenant, Acting Lieutenant, Sub-Lieutenant or Acting Sub-Lieutenant. Probationary R.N.R. officers under training may apply for interview at once and will be considered for transfer on completion of training.

TRANSFER FROM MERCHANT NAVY.—It is also intended to offer commissions to officers of the Merchant Navy other than R.N.R. officers. Candidates must be deck officers of the British Mercantile Marine holding a Board of Trade certificate as second mate or higher, and must have served at sea as officers of a British merchant vessel within one year of application. They will serve for a year on probation, most of the time on shore courses, and will afterwards come under the same regulations as ex-R.N.R. officers.

EMPLOYMENT OF R.N.V.R. OFFICERS.—Temporary employment in the Fleet is offered to officers of the R.N.V.R. and to gentlemen of the R.N. Volunteer Supplementary Reserve for a period of three years. They will be appointed in classes of ten to undergo a course of about one month at a shore establishment, followed by three months' training in a destroyer, and will afterwards be employed in destroyers, and possibly in cruisers, in lieu of Lieutenants, R.N.

COMMISSIONS FOR WARRANT OFFICERS.—A number of selected Warrant Officers are to be promoted to Lieutenant. Gunners, Gunners (T), Boatswains, Boatswains (A/S), Signal Boatswains, and Warrant Telegraphists, between the ages of 25 and 36, will be eligible. They will be given a special course of about four months in navigation and signals, and then sent to sea as Acting Lieutenants to obtain experience in watch keeping. At the end of six months they may be awarded certificates and confirmed as Lieutenant. They will be eligible to specialise.

LOWER DECK PROMOTION.—Revised regulations for the training, qualification and selection of young men of the lower deck for commissioned rank were published in Fleet Orders on 16th March, in which there was a less rigid insistence on the educational standard. There are 43 candidates from the lower deck undergoing whole time professional and educational instruction in two battleships with a view to qualifying for commissions. The Secretary to the Admiralty stated in the House of Commons on 16th March that the facilities they enjoy are comparable to those enjoyed by Cadets.

SOUND FILM APPARATUS.—The distribution to the Fleet of film projectors and sound reproduction equipment as a Service fitting will be made during the next few months. The Royal Naval Film Corporation, which will undertake the supply of films to seagoing ships, is now being constituted.

MATERIAL

1939 PROGRAMME.—The following vessels of this programme were ordered on 21st March :—

One Minelayer.—Hawthorn, Leslie and Co., Hebburn-on-Tyne.

Two Escort Vessels.—Cammell Laird and Co., Birkenhead.

Two Escort Vessels.—Parsons Marine Steam Turbine Co., Wallsend-on-Tyne (hulls by Vickers-Armstrongs, Ltd., Newcastle).
Two Escort Vessels.—Swan, Hunter and Wigham Richardson, Ltd., Wallsend-on-Tyne (machinery by Wallsend Slipway and Engineering Co., Wallsend).
Two Escort Vessels.—Yarrow and Co., Scotstoun, Glasgow.
Two Escort Vessels.—John Brown and Co., Clydebank.

1938 PROGRAMME.—The two 40,000 ton battleships of this programme, to be named the "Lion" and "Temeraire," were ordered on 21st February from Vickers-Armstrongs, Ltd., Newcastle-on-Tyne, and Cammell Laird and Co., Ltd., Birkenhead.

The second group of four cruisers of the "Fiji" type, to be named the "Ceylon," "Jamaica," "Gambia" and "Uganda," were ordered on 1st March from Vickers-Armstrongs, Ltd., Barrow-in-Furness; Vickers-Armstrongs, Ltd., Walker-on-Tyne (with machinery by the Parsons Marine Steam Turbine Company); Swan, Hunter and Wigham Richardson, Ltd., Wallsend-on-Tyne; and Alexander Stephen and Sons, Ltd., Govan, Glasgow.

No destroyers were included in the 1938 programme.

The three submarines of the programme, "Tetrarch," "Talisman" and "Torbay," were laid down at Barrow, Birkenhead and Chatham on 24th August, 27th September and 21st November, 1938, respectively.

It was announced in the House of Commons on 8th February that the approved 1938 programme was being increased by the acquisition for urgent Fleet services of 16 commercial trawlers and one drifter. The drifter has been named the "Brine.'

1937 PROGRAMME.—The launching of the cruisers "Bonaventure" and "Hermione" by the Scotts' Company, Greenock, and Messrs. Stephen and Sons, Govan, respectively was fixed for 19th April and 18th May.

The first five ships of the "Fiji" class, ordered in December, 1937, and laid down between February and June, 1938, should be launched during the present year.

Launching dates of the eight destroyers of the "Kelly" type are as follows:—

"Kelly," leader, Hawthorn Leslie and Co., 25th October, 1938.
"Kandahar," Denny and Brothers, 21st March, 1939.
"Kashmir," Thornycroft and Co., 4th April, 1939.
"Kelvin," Fairfield Company, 19th January, 1939.
"Khartoum," Swan Hunter and Wigham Richardson, 6th February, 1939.
"Kimberley," Thornycroft and Co., May, 1939.
"Kingston," J. S. White and Co., 9th January, 1939.
"Kipling," Yarrow and Co., 19th January, 1939.

The foregoing will be of 1,690 tons displacement, except the flotilla leader "Kelly," which is to be of 1,695 tons. The eight vessels of the "Laforey" class, authorised in the same programme, and ordered on 31st March, 1938, will be heavier, the leader of 1,935 tons and the other seven of 1,920 tons. These have been laid down at various dates since October, 1938.

The submarine "Taku" is due to be launched at Birkenhead on 5th May.

The escort vessel "Flamingo" (Yarrow and Co.) and patrol vessel "Shearwater" (J. S. White and Co.) were due to be launched on 18th April.

The escort vessel "Pelican" was completed by Messrs. Thornycroft and Co. on 2nd March, and has been commissioned.

The minesweeper "Sphinx" was launched on 7th February by William Hamilton and Co., Ltd., Port Glasgow.

1936 PROGRAMME.—The battleship "King George V," first to be launched in Great Britain since the "Nelson" and "Rodney" were put afloat in the autumn of 1925, was launched from the Walker-on-Tyne shipyard of Vickers-Armstrongs, Ltd., on 21st February. The naming ceremony was performed by H.M. The King who was accompanied by the Queen.

Following are official particulars of the ship. She is being built to the displacement of 35,000 tons limited by Treaty. Her main armament consists of ten 14 in. guns in three turrets. The secondary armament consists of sixteen 5.25 in. guns in eight turrets. Numerous smaller guns will be mounted. The machinery will be geared turbines, steam being supplied from oil-fired boilers. There will be four shafts and the ship will be appreciably faster than the "Nelson" and "Rodney." She will carry aircraft accommodated in hangars and flown off by means of a catapult. Particular attention has been given in the design to protection against gunfire, aerial bombs and mines. The complement of officers and men will be about 1,500. The ship will be fitted to serve as the flagship of the Commander-in-Chief of a fleet. The amenities for the ship's company will be of a high standard.

The launch of the "Prince of Wales," sister-ship, at Birkenhead, has been fixed for 3rd May, the naming ceremony being performed by the Princess Royal.

The aircraft-carrier "Illustrious" was launched on 5th April by Vickers-Armstrongs, Ltd., Barrow-in-Furness. A sister-ship, the "Victorious," building by the same firm at their Walker-on-Tyne yard, is due to be launched in September.

Launching dates of new cruisers of the "Dido" class are as follows:—

"Naiad," by Hawthorn Leslie & Co., 3rd February.

"Phoebe," by the Fairfield Company, 25th March.

The remaining destroyers of the "Tribal" class—"Bedouin," "Mashona," "Punjabi" and "Tartar," were completed in March for service in the 2nd Tribal Flotilla, Home Fleet.

H.M.S. "Jackal," first of the "Javelin" class, was completed on 31st March, and the rest are due to complete by the summer.

1935 PROGRAMME.—The cruiser "Gloucester" was commissioned at Devonport on 27th January for service as flagship in the East Indies in place of the "Norfolk." On 21st February, the Duke and Duchess of Gloucester visited the ship, and the Duchess presented gifts of silver plate.

GENERAL.—The Dockyards and private shipbuilding yards will be engaged in 1939 in the building of some 200 vessels of a total of 870,000 tons. Included in the total will be:—

9 Battleships
6 Aircraft carriers
25 Cruisers
43 Destroyers
19 Submarines

and a large number of small vessels.

There will be completed 220,000 tons a year on the average in 1940 and 1941, as compared with an average of 170,000 tons in the years 1912-1914, immediately preceding the War.

In some forty cases, extensions have been made to premises and plant of the armament firms, to widen the sources of production, at a cost of about £8,000,000,

to which the Government has contributed generously. Plant is now coming into full production.

Exercises and Cruises.

Combined Exercises.—The customary combined exercises between the Home and Mediterranean Fleets took place in the neighbourhood of Gibraltar; Part I from 27th February to 3rd March, and Part II from 6th to 10th March. Nearly a hundred vessels were engaged.

Singapore Meeting.—The annual combined exercise between ships of the East Indies and China Squadrons at Singapore took place in the week beginning 13th March. The cruisers "Norfolk" and "Manchester" were present from the East Indies, and the "Kent," "Suffolk," "Eagle" and "Falmouth" were among those from China. Including destroyers and submarines, over twenty-five units were engaged.

Royal Wedding at Teheran.—H.M.S. "Norfolk," flagship of Vice-Admiral J. F. Somerville, was ordered to form part of the escort up the Persian Gulf of the liner "Mohamed Ali el Kebir," in which the Crown Prince of Iran was to take his bride to Bandar Shahpur in April, and a contingent from the cruiser was to go to Teheran for the wedding ceremonies.

Ceremony at Cannes.—H.M.S. "Royal Sovereign," flagship of Rear-Admiral L. E. Holland, visited Golfe Juan from 3rd to 10th February, and furnished a contingent to take part in the ceremonial changing of the name of the Place des Iles, Cannes, to the Square Neville Chamberlain on 8th February, at which Lord Derby represented the Prime Minister.

Earthquake Service.—The cruisers "Exeter" and "Ajax" were actively engaged in relief work at the end of January in connection with the earthquake which devastated large areas in the southern half of Chile. The vessels conveyed supplies from Valparaiso to Talcahuano, near Concepcion; large numbers of refugees were transported, and assistance was also given in the carriage of vaccines by air.

Surrender of Minorca.—At the request of the local authorities in Palma, the British Government undertook to convey a senior officer to Minorca in order that he might negotiate for the peaceful surrender of that island by the Republican leaders. H.M.S. "Devonshire," Captain G. C. Muirhead-Gould, proceeded there from Marseilles, taking Colonel San Luis, Military Governor of Majorca, and embarked some 450 refugees who feared they might run the risk of reprisals and who were landed at Marseilles on 10th February.

While the "Devonshire" was engaged in this humane task, three bombing aircraft from Majorca, escorted by fighters, and bearing the Nationalist colours, appeared and began to drop bombs. In order to avoid risking the lives of his ship's company Captain Muirhead-Gould decided to steam out of harbour. He returned an hour later to rescue the refugees, having warned both sides that he could not possibly continue to lend his help if the raids continued. The bombers were understood to be Italian, as all the genuinely Spanish machines in Majorca had been ordered to keep themselves at home.

Yangtse Flotilla.—After passing safely through the opposing lines, Lieutenant-Commanders R. S. Stafford, of H.M.S. "Ladybird," and C. R. Jeffs, of the U.S.S. "Oahu," arrived at Kuling on 19th February, the mountain resort up the Yangtse, to evacuate any marooned foreigners who wished to leave the mountain before the Japanese attack.

ASHANTIS AND THE NAVY.—The new destroyer "Ashanti," Commander W. G. Davis, visited Freetown, Sierra Leone, and Takoradi, Gold Coast, between 22nd February and 6th March. At Kumasi on 1st March, Commander Davis and a detachment of officers and men were present at an Assembly of Chiefs at which gifts of a silver bell and a golden shield bearing the emblem of Ashanti, a porcupine with the motto "Kum apim beba" ("Kill a thousand and a thousand will come") were presented to the ship.

AFRICAN CRUISE BY SUBMARINE.—The submarine "Thames," Commander J. G. Gould, returned to Malta on 16th January after a three months' cruise around the African Continent, proceeding via the West Coast and returning by way of the East Coast and Suez Canal. This was the first visit of a British submarine to South Africa.

MISCELLANEOUS

NAVY WEEK.—The 1939 Navy Week will be held at Portsmouth, Devonport and Chatham on Saturday, 5th August, and from Bank Holiday Monday, 7th August to Saturday, 12th August, inclusive.

DRILL-SHIP RENAMED.—As the name "Unicorn" has been appropriated for a new Fleet Air Arm supply and repair ship, the old ship of that name will in future be known as "Unicorn II." Except for the "Victory," this vessel is the oldest still in service under the White Ensign. She was built as a fifth-rate in 1824, and has been a drill-ship for naval reserves at Dundee since 1873.

FLEETS OF THE WORLD.—The Annual Return of Fleets of the principal naval Powers was published on 22nd February (Cmd. 5936, price 2s.). A note states that as it is no longer the practice of the Government of the U.S.S.R. to furnish particulars for this purpose, all reference to the Soviet Navy has now been omitted.

FLEET AIR ARM

TRANSFER OF CONTROL.—It is anticipated that the Admiralty will assume responsibility for the specialised training of pilots and other flying personnel at an early date. The initial training of pilots and the training of maintenance personnel will remain the responsibility of the Air Ministry. In so far as the number of bases where the specialised training will be carried out, in addition to the training of disembarked squadrons, will not be sufficient for the Navy's needs, it is proposed to construct new bases or to use R.A.F. stations on a shared basis.

Provision is made in the Works Vote of the Navy Estimates for the expenditure on accommodation for Fleet Air Arm personnel of £13,500 at Ford, £9,500 at Lee-on-Solent, £3,400 at Worthy Down, and £8,050 at Donibristle. A new "dockyard" for Fleet aircraft will be provided at Bedenham, Hants, and a naval air station at Hatston, Kirkwall.

FLEET AIR ARM BADGES.—Admiralty Fleet Order 908 of 6th April, 1939, states "His Majesty the King has been pleased to approve the design of badges . . . to be worn by officers qualified as Pilots and by officers of the Air Branch of the Royal Navy, respectively."

All officers who have qualified as Pilots in the Fleet Air Arm, including officers still eligible to be employed as Pilot of a Service aircraft but who may be doing a period of general service or corps duty, will wear a badge of wings of gold embroidery having in the centre a silver anchor and cable surrounded by a gold embroidered wreath and surmounted by a crown.

Officers of the Royal Navy and Royal Naval Volunteer Reserve will wear this badge on the left sleeve immediately above the circle of the upper row of distinction lace; Midshipmen in a corresponding position. Royal Marine officers will wear it on the left breast.

Officers of the Air Branch of the Royal Navy will wear a capital A as a badge inside the circle of the upper row of distinction lace.

Illustrations of these badges and further details are given in the Fleet Order referred to.

METEOROLOGY AND PHOTOGRAPHY.—Observer Officers of less than seven years' seniority as Lieutenant will be needed to undergo photographic and meteorological courses. Names of volunteers, who must have served for at least one year as confirmed observer, and are recommended, must be forwarded to the Admiralty.

EX-R.N.R. OFFICERS.—The age up to which officers transferred from the R.N.R. will be eligible to specialise as air Pilot or Observer, provided they have obtained their naval watchkeeping certificates, has been raised from 24 to 28 years.

MARINE RATING PILOTS.—Royal Marine ranks who are selected for training as Rating Pilot will retain their R.M. uniform for a period of one month's training, although they will continue to be transferred to the seaman branch on commencing training as Pilot.

SEAMEN FOR AIR BASES.—A Fleet Air Arm Supplementary Party has been instituted to provide men for service as guards, boats' crews, aircraft hands, parachute packers, and the like at naval air bases. Enrolment will be open to long service pensioners under the age of 53, Royal Fleet Reservists, class "B," and other ex-naval ratings, including artificers.

TECHNICAL OFFICERS.—Air Branch officers, R.N., who volunteer to specialise as technical officers for the Fleet Air Arm will be required to pass a qualifying examination in practical and applied mathematics, general technical science, and practical geometry and mechanical drawing before being allowed to take the specialist course. (A) Branch officers who have transferred from the R.A.F. and hold the rank of Lieutenant may in certain circumstances be permitted to specialise without completing a whole commission on general flying duties in the Fleet Air Arm.

WARRANT RANKS.—It has been decided to institute Warrant ranks for the various classes of flying and maintenance ratings as follows:—Warrant Pilot (for ex-rating pilots), Warrant Observer (to replace Boatswain (O) for ex-Observer's Mates), Warrant Aircraft Officer (for ex-Air Artificers), and Warrant Air Mechanic (for ex-Air Mechanics).

NEW AIRCRAFT TYPES.—The new design of fighter, known as the "Skua," has completed trials and the first squadron of "Skuas" is being embarked in the "Ark Royal" on her return from the Mediterranean. Another fighter, the "Roc," is about to undergo trials. A third fighter will start delivery towards the end of the year. The main T.S.R. aircraft for the Fleet, the "Swordfish," will be reinforced by the "Albacore," of which deliveries in quantity will start in the autumn. Orders have been placed for a new T.S.R. type.

STRENGTH.—By 1942 the Fleet Air Arm will not suffer in comparison with that of any other Navy, said the Parliamentary Secretary to the Admiralty, when introducing the Navy Estimates. By then the personnel should have increased to 10,000 or more, and the aircraft will be of the latest type. The F.A.A. in total aircraft will be comparable in strength to the R.A.F. ten years ago.

ROYAL MARINES

GIBRALTAR INSPECTION.—Some 2,000 officers and men of the Royal Marines from the combined Home and Mediterranean Fleets were inspected on the Alameda Parade, Gibraltar, on 15th March by the Adjutant-General, Lieutenant-General Sir William Godfrey, K.C.B., C.M.G. The ceremony concluded with a march past. This was the first time that the Adjutant-General had been present at such an inspection overseas. Sir William Godfrey left London on 9th March, and returned from Gibraltar in H.M.S. "Nelson."

ROYAL MARINES AND EAST SURREYS.—General Sir Richard F. C. Foster, K.C.B., C.M.G., D.S.O., late Adjutant-General, Royal Marines, has been appointed Colonel of The East Surrey Regiment, in succession to Major-General Sir John Longley, K.C.M.G., C.B., who had held the appointment since 1920. There is an historic association between the Royal Marines and The East Surrey Regiment, which was originally Colonel Villier's Regiment of Marines, and served as such at Gibraltar in 1704–05.

ROYAL NAVAL RESERVES

NEW R.N.V.R. DIVISIONS.—Anti-aircraft training is being introduced in the R.N.V.R. with the object of providing trained guns' crews for ships in reserve. A considerable increase in the establishment of the R.N.V.R. is involved, and additional divisions will be set up at Hull, Southampton and Cardiff. The first-named will be known as the Humber Division, and Commander A. H. B. Day, R.N., has been appointed as the first Officer-Instructor. The cruiser "Calcutta" is to be used as drillship.

IMMEDIATE RESERVE.—A new "Immediate" class of the Royal Fleet Reserve has been formed, composed of men who undertake to serve, if required, at a time when the R.F.R. has not been called into actual service. Such a reserve existed from 1912 onwards, but lapsed after the War. The response has been very good. The Admiralty hoped to get 4,000 members, and within a month of the announcement of the revival of this Reserve, nearly 3,000 had enrolled.

VOLUNTEER MINESWEEPING COMPANY.—A Volunteer Naval Auxiliary Company has been formed at Portsmouth, attached to H.M.S. "Vernon," torpedo and mining school, to operate minesweeping and boat services at that port in time of emergency. Age limits are from 18 to 60, and members attend evening lectures, carry out five days boat-work at week-ends, and a week's cruise in a minesweeper.

Grants are included in the 1939 Navy Estimates to be made to officially recognised Naval Brigades composed of men who volunteer for sea service and are willing to undertake to serve in the Royal Navy in the event of war, but who cannot be enrolled in any of the Naval Reserves.

MERCHANT NAVY DEFENCE COURSES.—In further development of the defence courses for Merchant Navy Officers which were started in August, 1937, the Admiralty announced on 20th January the institution of a scheme for the peace-time training of Merchant Navy seamen in gunnery. The course, open to seamen and stewards now employed afloat and to unemployed ex-seamen, between the ages of 18 and 50, is held at the principal shipping ports, and lasts a fortnight.

Submarines "L.26" and "L.27" visited London from 14th to 16th March and were berthed in the Shadwell Basin to allow Merchant Navy officers to inspect them for instructional purposes.

R.N.V.R. Tyne Division—"Calliope" Celebrations.—To celebrate the 50th Anniversary of the famous escape of H.M.S. "Calliope" from Apia Harbour, Samoa, in a hurricane, Captain E. W. Swan, O.B.E., V.D., R.N.V.R., and the officers of the Tyne Division held a dinner on board at which the guests included two Midshipmen who had been in the ship on that occasion and who are now Flag Officers on the Retired List. The "Calliope" has been the drill-ship of the Division for the past thirty-two years.

DOMINION NAVIES

Royal Australian Navy

Naval Board.—Captain M. W. S. Boucher, D.S.O., R.N., has been lent to the Royal Australian Navy for two years from 3rd March for duty as Second Naval Member of the Naval Board, in succession to Rear-Admiral G. P. Thomson, C.B.E.

Visits to United States.—On her way out to Australia, the cruiser "Amphion," which is to be transferred from the Royal Navy in July and renamed the "Perth," will visit New York for about two weeks in the first half of August, and San Francisco for about ten days in the middle of September.

Anti-Submarine School.—An Anti-Submarine School was opened at Sydney in February. The submarine "Phoenix," from the China Station, arrived there on 24th February to co-operate in the instruction, remaining until the first week of April.

New Zealand Division, Royal Navy

Return of the "Achilles."—The cruiser "Achilles" returned to Portsmouth on 25th January, and was recommissioned on the 27th by Captain W. E. Parry for further service in the New Zealand Division. She left again on 21st February, and spent a month at Gibraltar to work up before returning via the Suez Canal.

Visits to Australia.—The cruiser "Leander," with Commodore J. W. Rivett-Carnac, D.S.C., Commanding New Zealand Squadron, left Auckland on 30th March for a month's cruise to Sydney and Jervis Bay. The escort vessels "Leith" and "Wellington" visited Sydney from 24th February to 31st March.

Royal Canadian Navy

Destroyers at Jamaica.—For the first time, all six destroyers of the Canadian Navy, the "Ottawa," "Restigouche," "Fraser" and "St. Laurent," from Esquimalt, and the "Skeena" and "Saguenay," from Halifax, joined up at Kingston, Jamaica, from 16th February. In the first week of March, 27 warships of the Royal, Royal Canadian, and United States Navies were assembled there.

The auxiliary sailing vessel "Venture" cruised in the West Indies and accompanied the Canadian destroyers to Bermuda in the middle of March.

Hong Kong

The text was published in the *London Gazette* on 10th February of "The Hong Kong Naval Defence Order, 1939," which authorises the Admiralty to accept any offer made by the Government of Hong Kong to place at His Majesty's disposal for general service in the Royal Navy any officers and men of the Hong Kong Naval Volunteer Force, in accordance with the Colonial Naval Defence Act of 1931. The escort vessel "Cornflower" serves as drill-ship for this Force, moored to the South-West of Kellett Island.

COMPARATIVE NAVAL STRENGTHS

BUILT

The following are the comparative strengths of the fleets of the six principal Sea Powers in the more important classes of completed ships, as given in the Official Return published by the Admiralty in February last (Cmd. 5936):—

Class of Ship	*British Commonwealth*	*United States*	*Japan*	*France*	*Italy*	*Germany*
Battleships	12	15	9	5	4	—
Battle Cruisers	3	—	—	1	—	2
Armoured Ships	—	—	—	—	—	3
Aircraft Carriers	7	5	5	1	—	—
Seaplane Carriers ..	1	—	3	1	—	—
8-in. Cruisers (A) ..	15	17	17[1]	7	7	—
5.1-in.—6.1-in. Cruisers (B)	45[2]	15	21[3]	11	14[4]	6
Light Cruisers (C) ..	—	—	1	32	—	—
Destroyers	159[5]	209[6]	83[7]	26	48	17
Small Destroyers or T.Bs.	11[8]	—	38[9]	14	69[10]	16[11]
Escort Vessels	38	—	—	25	32	8
Patrol Vessels	8	9	—	—	—	—
Minelayers	1	8	11	—	—	—
Minesweepers	38[12]	—	12	8[13]	39	29
Submarines	54[14]	87[15]	58[16]	76	104[17]	43

(1) Includes 5 over-age ships
(2) ,, 21 ,, ,,
(3) ,, 8 ,, ,,
(4) ,, 2 ,, ,,
(5) ,, 62 ,, ,,
(6) ,, 162 ,, ,,
(7) ,, 16 ,, ,,
(8) ,, 10 ,, ,,
(9) ,, 20 ,, ,,
(10) Includes 28 over-age ships
(11) ,, 5 ,, ,,
(12) ,, 12 ,, ,,
(13) ,, 8 ,, ,,
(14) ,, 10 ,, ,,
(15) ,, 67 ,, ,,
(16) ,, 19 ,, ,,
(17) ,, 7 ,, ,,

BUILDING

The following are the principal warships building for the same Powers, as enumerated in the same publication:—

Class of Ship	*British Commonwealth*	*United States*	*Japan*	*France*	*Italy*	*Germany*
Battleships	7	6	Not known	2	4	2
Battle Cruisers	—	—	—	1	—	—
Aircraft Carriers	6	1	1	—	—	2
Seaplane Carriers ..	—	—	2	—	—	—
8-in. Cruisers (A) ..	—	1	—	—	—	5
5.1-in.—6.1-in. Cruisers (B)	21	8	2	—	—	—
Destroyers	28	42	2	8	9	5
Small Destroyers and T.Bs.	—	—	—	4	—	18
Escort Vessels	5	—	—	2	—	—
Patrol Vessels	3	—	—	—	—	—
Minelayers	3	—	—	—	—	—
Minesweepers	4	—	—	18	—	7
Submarines	15	19	2	10	7	22

FOREIGN NAVIES

COLUMBIA

One result of the American "good neighbour" policy has been the acceptance of the services of a United States Naval Mission. This involves the termination of an unofficial Naval Mission at present in that country consisting of retired British naval officers and ratings. The personnel of the latter was in any event steadily being relieved by Columbians, who had been trained by the British Mission in their naval duties.

FRANCE

SPECIAL DEFENCE DECREES.—On the 27th March, 1939, M. Lebrun, President, signed five new Decree Laws which were submitted to him by M. Daladier, the Prime Minister. They provide for:—

(1) Increases in the personnel of the navy;
(2) Changes in the navy recruiting laws and in the organization of the naval reserves;
(3) Increases in the number of naval engineers and technical officers;
(4) New measures for the defence of frontier areas;
(5) The granting of additional credits for industrial mobilization.

NAVAL BUDGET.—The naval budget for the current year amounts to 2,674,172,367 francs, which is an increase of 22 per cent. on that quoted for 1938. No additional new construction is contemplated or provided for in this budget. The completion of new construction already sanctioned will absorb the whole of the present financial resources.

Provision is made for revised and approved scales of pay. The *Rapporteur* of the Marine Commission remarked that, if the present dissatisfaction were allowed to spread, sources of recruits would shortly be exhausted, thus the milliards now being spent on new construction for the fleet would be entirely wasted.

Altogether a sum of 8,000,000,000 francs has been allocated to the navy in the budget for 1939. This is made up of the naval vote mentioned above and 5,329,000,000 francs from the *Comte des Investissement.*

NEW CONSTRUCTION.—The 35,000 ton battleship "Richelieu" was floated at Brest on the 17th January. She has been transferred to a dock at La Ninon, where a length of 37 metres is being added to her bows and 8 metres to her stern. The following are details of the ship recently published in the French Press:—

Length—806 ft.; Beam—123 ft.; Draught—30 ft.
Armament—Eight 15-in. guns in two quadruple turrets; fifteen 5.5-in. guns in five triple turrets—three in the stern and two abreast the armoured tower; twelve 3.9-in. guns; and a number (not stated) of smaller calibre A.A. guns and mitrailleuse.
Engines—150,000 h.p.; Estimated full speed—31.5 knots.

The weight of the propelling machinery is reported to be very low and not more than 3,000 tons. It is estimated that the weight of the armour protection (hull—vertical and horizontal, and turrets, etc.) is not less than 70 per cent. of the total displacement.

The same day as the "Richelieu" was put afloat, a sister ship—the "Clemenceau", was laid down. Some 3,500 tons of material was ready in hand, and permission to engage credits to the extent of nearly two-thirds of the total cost of the ship has

been approved. A third ship of the class, the "Jean Bart," is building and is due for completion in 1940. The fourth ship, the "Gascoigne," is due to be laid down during the current year.

The programme in hand also includes two 18,000 ton aircraft carriers, three 8,000 ton cruisers, and various light craft and submarines. The total tonnage under construction or due to be laid down is 340,000 tons. This is stated to be the biggest naval effort that France has ever undertaken, even including 1913.

Some details of the aircraft carriers, cruisers and submarines were given in last quarter's Notes.

NAVAL AIR SERVICE.—The *Aéronautique Navale* is to be developed in line with the rest of the fleet, and will be supplied during 1939 with new and modern aircraft.

WORKING HOURS.—The Minister of Marine has stated that in view of the necessity for accelerating the rhythm of new construction and also repairs to ships it was decided as from the 5th December, 1938 that four hours extra will be worked each week in all arsenals and naval establishments. These extra hours will be paid for at the rate of 10 per cent. over the normal rates.

NEW TARGET SHIP.—A new target ship is building at Lorient and will be called "L'Impassible."

CONSEIL SUPERIEUR DE LA MARINE.—The following Flag Officers were appointed to be members of the *Conseil Superieur de la Marine* for the year 1939:—Vice-Admirals De Laborde, Castex, Esteva, Juge (up till 11th April, 1939), Abrial, and Devin (as from 11th April, 1939).

GERMANY

NEW BATTLESHIPS.—The battleship "Tirpitz" was launched at Wilhelmshaven by the late Grand Admiral's daughter in the presence of Herr Hitler, on 1st April

This is a sister ship of the 35,000 ton "Bismarck" which was launched last February. These ships will have an armament of eight 15-in. guns in two turrets, twelve 6-in. and a number of A.A. guns.

NEW AIRCRAFT CARRIER.—The first aircraft carrier to be built for the German navy was launched at Kiel on the 8th December last and named the "Graf Zeppelin." A second ship of the same class is building. According to *Jane's Fighting Ships*, these vessels displace 19,250 tons, are armed with sixteen 5.9-in., ten 4.1-in. A.A. and twenty-two 37 m.m. A.A. guns. They can carry forty aircraft, and have a speed of 32 knots. They are reported to be well protected.

NEW CRUISERS.—The two new 10,000 ton 8-in. cruisers which Germany has claimed the right to build are those which were originally described as "K" and "L," and which were to have carried an armament of 5.9-in. guns. It is exceedingly probable that these vessels were designed from the first to carry the heavier armament.

NETHERLANDS

NEW CONSTRUCTION.—According to an article written in a Dutch paper by the Minister for Defence, between 160,000,000 and 170,000,000 florins will be spent on naval construction in the four years 1938–41. This will provide for two cruisers, one flotilla leader, four large destroyers, nine submarines, three gun boats, and lighter material, including a large number of aircraft, motor torpedo boats, etc. The greater part of this construction is primarily destined for the defence of the Netherlands East Indies.

The two cruisers, which will be improved "Java" class, are both due to be laid down early this year. They will be vessels of 8,300 tons and are to carry ten 5.9-in. and fourteen 40 mm. A.A. guns, six or eight 21-in. torpedo tubes, and two aircraft. They will have 3 to 4-in. side armour, and an estimated speed of 33 knots.

A small gunnery training ship, the "Van Kinsbergen," was launched at Rotterdam on the 5th January. She will be armed with four 4.7-in. guns and two twin 4 mm. machine guns.

It is reported that an order has been placed for the construction of twenty motor torpedo boats. The first is to be built by the British Power Boat Company and the remainder under licence in Holland. The boats will be about 75 ft. long, and will be armed with four 18-in. torpedo tubes and two A.A. machine guns ; they will also be equipped to carry depth charges and smoke-making apparatus. The speed has not been made public, but they will have three Rolls-Royce engines, which should give them something not far short of 50 knots. The crew will consist of two officers and seven ratings.

SOVIET UNION

NAVAL POLICY.—It is repeatedly asserted that it is the intention of the Soviet Union to create a great sea-going fleet, but little progress appears to have been made towards acquiring the larger and most essential units. It is understood that negotiations with the United States in regard to the construction of two battleships have not yet materialized, and difficulties are evidently being experienced in securing the necessary facilities and technical personnel to enable such ships to be built at home.

NEW CRUISERS.—The second cruiser of the 8,500 ton "Kirov" class, the "Maxim Gorki," is now in service. The remaining two ships—the "Kubyshev" and "Orjonikidze"—are due for completion this year. Details of their armament were given in last quarter's JOURNAL.

FLOTILLA LEADERS.—A class of nine flotilla leaders of 2,600 tons will shortly be added to the Soviet navy. They are being armed with five 5.1-in., and four 37 mm. guns, and six 21-in. torpedo tubes. With a horse power of 90,000, their estimated full speed is 38 knots. These ships are of Italian design, and there is good reason to believe that Italian technical assistance has been given in building them at Leningrad. It would be interesting to know how this can be reconciled with the professed attitude of the Fascist Government towards Bolshevist Russia.

DISCIPLINE IN THE FLEET.—Mention was made in last quarter's Naval Notes of the extent to which the fleet was riddled with political espionage and of the indifferent standard of leadership owing to the recent purging of Commanders-in-Chief and other senior officers.

Complaints are now appearing in the naval paper *Krasni Flot*, criticising the bad discipline maintained by officers and petty officers. It is alleged that young officers are inclined to avoid enforcing discipline when circumstances are perhaps unpleasant or distasteful. Captains do not always carry out the standing instructions that they are to go round their ships at least once every twenty-four hours. In some ships Officers of the Watch have failed to carry out a thorough inspection of liberty men, with the result that on shore ratings have been frequently detained by the garrison patrol for being improperly dressed. A case is quoted of a destroyer in the Black Sea Fleet, where leave breaking is not only on the increase but, owing to the slackness of officers, goes unpunished. One rating who was absent without leave for forty-eight

hours was able to avoid punishment by getting on the right side of the ship's Commissar.

In view of the way in which the authority of officers has been systematically undermined and the position of the more senior of them continually imperilled, this state of affairs is not to be wondered at.

SPAIN

(See "International Situation," p. 383)

UNITED STATES

NEW BATTLESHIPS.—It was officially reported on the 28th March that the President had informed the Chief of Naval Operations that he intended to ask Congress for the necessary appropriation to lay down two battleships of approximately 45,000 tons each. As already mentioned in these Notes there is good reason to believe that this step has really been held up pending the completion of the designs for these ships.

NAVAL BASES.—A special committee under the chairmanship of Rear-Admiral A. J. Hepburn has recommended that the following bases should have priority of completion:—

Air Bases: Chesapeake Bay (Hampton Roads, Virginia), South-eastern Base (Jacksonville, Florida), Puerto Rico (San Juan), Coco Solo (Canal Zone), Seattle (Washington), Sitka (Alaska), Kodiak (Alaska), Pearl Harbour (Hawaii), Kaneohe Bay (Oahu), Midway Island, Wake Island, Johnston Island, Palmyra Island, Guam.

Submarine Bases: Guam, Puerto Rico, Canal Zone, Unalaska Island, Midway Island, Wake Island.

Destroyer Bases: San Diego (California).

Mine Bases: Yorktown (Virginia), Hawthorne (Nevada), Mare Island (California), Oahu (Hawaii).

The proposal to develop bases at Wake Island and Guam is causing some resentment in Japan.

ANNUAL MANŒUVRES.—Extensive manœuvres were carried out on the Atlantic side during January. The main portion of the fleet, consisting of eighty ships, passed through the Panama Canal on the 14th/15th January. The whole operation was completed in thirty-six hours with only one slight delay, when the battleship "Mississipi" touched a bank. Forty-eight flying boats flew from San Diego to Coco Solo harbour—a distance of 2,500 miles, to take part in the exercise; all except three covered the distance non-stop in twenty-five hours.

An exercise known as "Fleet Problem 20" was carried out in February and March in West Indian waters and the Atlantic Ocean to the East of the Lesser Antilles. It was designed to give the maximum fleet training, training of personnel and tests of material under varying conditions of sea and weather. The problem represented a situation in which the Black Fleet was defending a coast and had to defeat the White Fleet which was attempting to establish a base on that coast.

Altogether some 140 warships and 600 aircraft took part. Subsequently, the fleet was to rendezvous in the Guantanamo area for tactical, gunnery and miscellaneous exercises. On 16th April it was suddenly announced that the Fleet would return to its 'normal station' on the Pacific Coast,

ARMY NOTES

His Majesty the King

His Majesty the King has been graciously pleased to approve the following appointments :—

Colonel (tempy. Brigadier) H. E. W. B. Kingsley, D.S.O., Indian Army, to be Aide-de-Camp to the King ; with effect from 21st December, 1938.

Colonel C. Ross, O.B.E., to be Aide-de-Camp to the King ; with effect from 8th January, 1939.

Major-General A. W. Bartholomew, C.B., C.M.G., C.B.E., D.S.O., to be Lieutenant of the Tower of London ; with effect from 6th March, 1939.

Colonel V. J. Greenwood, M.C., to be Colonel, 10th Royal Hussars (Prince of Wales's Own) ; with effect from 29th January, 1939.

General Sir Ivo L. B. Vesey, K.C.B., K.B.E., C.M.G., D.S.O., to be Colonel, The Queen's Royal Regiment (West Surrey) ; with effect from 4th May, 1939.

Colonel W. N. Nicholson, C.M.G., D.S.O., to be Colonel, The Suffolk Regiment ; with effect from 25th March, 1939.

Major-General C. N. F. Broad, C.B., D.S.O., to be Colonel Commandant, Royal Tank Corps ; with effect from 14th January, 1939.

Major-General R. S. Hannay, C.B., C.M.G., D.S.O., to be Colonel Commandant, Royal Army Medical Corps ; with effect from 8th June, 1939.

Colonel the Earl of Elgin and Kincardine, K.T., C.M.G., T.D., LL.D., to be Honorary Colonel, The Elgin Regiment, Non-Permanent Active Militia of Canada ; with effect from 23rd November, 1938.

Appointments and Promotions

The War Office has announced the following appointments and promotions :—

Sir James Grigg, K.C.S.I., to be Permanent Under-Secretary of State for War ; with effect from October, 1939.

Colonel L. H. K. Finch, D.S.O., O.B.E., to be Director of Recruiting and Organization, the War Office ; with effect from July, 1939.

Colonel J. A. Manifold, D.S.O., M.B., to be Director of Hygiene, the War Office ; with effect from 16th April, 1939.

Lieutenant-General Sir John E. Brind, K.C.B., K.B.E., C.M.G., D.S.O., Colonel Commandant, Royal Artillery, to be General.

C.I.G.S.'s Visit to the French Army

General The Viscount Gort, Chief of the Imperial General Staff, at the invitation of General Gamelin, spent a few days in France during which time he saw an exercise

with troops and visited the fortifications of the Maginot Line. This invitation was given personally by General Gamelin when Lord Gort passed through Paris on his return from Egypt. Viscount Gort left Hendon Aerodrome by aeroplane for France on 27th March, 1939. He was accompanied by Major-General H. R. Pownall, Director of Military Operations and Intelligence, Major-General L. Carr, Director of Staff Duties, Brigadier F. E. Hotblack, Deputy Director of Staff Duties (Armoured Fighting Vehicles) and Major D. W. Gordon, Military Assistant to the Chief of The Imperial General Staff.

ARMY ESTIMATES

During the last twelve months, the strength of the Regular and Territorial Armies has been substantially increased and their efficiency for war enhanced by the issue of large quantities of modern war equipment. These measures, however, have proved costly and have raised the total of the Army Estimates this year to £161 millions (approx.), an increase of £46 millions compared with a year ago.

The total of Vote A (number of men on the establishment of the Regular Army, exclusive of troops in India and Burma) is 187,000 compared with 170,000 in 1938. Equally, the strength of the Territorial Army has risen to 206,000 compared with 160,000 a year ago. The decision taken by His Majesty's Government, subsequent to the publication of the Army Estimates, to recruit the Territorial Field Army to full war establishments and then to double them has, of course, created a new situation for which new establishments will be required.

The numbers of the Army Reserve at the end of the financial year will be about 139,000. This is regarded as an adequate figure and re-engagement of section D reservists has been discontinued. The Supplementary Reserve is making steady progress and, at the present rate of recruiting should rise to about 52,000 at the end of the year. It is now about 35,000.

While detailed statistics of the production of munitions cannot, in the public interest, be published, the acceleration of the re-armament programme is shown by a comparison of the provision made under Vote 9C, Warlike Stores, during the last three years. The figures are: 1937, £25,000,000; 1938, £38,000,000; 1939, £55,000,000. A non-technical survey of the new Arms and Equipment is given on page 304 (etc.) of this JOURNAL, and an endeavour has been made to forecast the probable methods of their employment in the field. Activity in every sphere has advanced the mechanization of the Army, the issue of anti-aircraft equipment, the improvement of coast defences at home and abroad and the accumulation of reserves of material of all kinds. The cumulative effect of all these measures has been to place the Army in a far more satisfactory position to meet its obligations than was recently the case.

POINTS FROM THE ESTIMATES SPEECH BY THE SECRETARY OF STATE FOR WAR.—The attached summary does not purport to set out the details and conditions of all the measures announced. These will be found in the Secretary of State for War's speech and in the orders and regulations which will be published subsequently to implement these measures.

AIR AND COAST DEFENCE

During the current financial year (*i*) Five Anti-Aircraft Divisions have replaced the two which formerly existed. A Corps H.Q. has been set up to control them.

(*ii*) A Deputy C.I.G.S. has been appointed to co-ordinate all A.A. activities within the War Office.

(*iii*) The emergency of September, 1938, required the embodiment of the A.A. and Coast Defences.

(*iv*) The whole-time administrative and maintenance assistance available to A.A. units have been increased.

(*v*) More concrete emplacements have been prepared and more guns will be kept upon their sites.

(*vi*) The transport system has been overhauled and the methods for the calling out of personnel accelerated.

(*vii*) More mobilization stores are being built. Similarly a complete nexus of magazines will speed up the issue of ammunition.

During the coming financial year (*i*) Two more Divisions are to be added to the five established A.A. Divisions. There will thus be seven A.A. Divisions.

(*ii*) The Corps will be made into a Command and its Commander will become G.O.C., A.A. Command.

(*iii*) The Deputy C.I.G.S. at the War Office will be known as Director-General, A.A. and Coast Defence.

(*iv*) The existing number of batteries is to be increased by between 50 and 100 per cent.

(*v*) Every existing medium and heavy A.A. battery will have its war complement of guns and every searchlight company its searchlights.

(*vi*) A new factory for 3.7-in. guns will begin production this autumn.

(*vii*) Deliveries of a 40 mm. (2-pdr.) gun of Swedish design for Light A.A. batteries will begin in the autumn. Meanwhile a quantity has been purchased from abroad.

(*viii*) Five separate practice camps were held last summer; by 1940, there will be at least double this number. Shooting will be at trailed targets, and at wireless controlled pilotless aircraft operated from the ground.

(*ix*) More searchlight units will practice at their war stations with the R.A.F.

Defence of Overseas Ports

With the object of maintaining the peace garrisons of overseas ports at a strength adequate for defence on the outbreak of war, without trenching upon the Regular Army, native personnel are to be enlisted wherever possible.

Malta :—Eleven hundred Maltese gunners are to be added to the existing establishment. Rates of pay and pension rates have been increased. Maltese who enter units liable for general service, receive pay at British rates; Maltese rates apply only to Maltese units serving in Malta; these Maltese rates have also been increased. A Depot is to be formed in the Island for the training of recruits for both Maltese and British units. Recruits are trained not only in military subjects, but in English also. Maltese artisans will be recruited for service in the R.A.O.C., and will be employed in Mediterranean Stations.

Cyprus :—A British officer has been despatched to Cyprus to ascertain to what extent the desire of the people of that Island to play their part in Imperial defence can be met.

Singapore :—Malay and Indian establishments will be increased by about 1,000.

Hong Kong :—Chinese and Indian personnel will be increased by about 1,000.

Ceylon :—For the first time Ceylonese soldiers will be raised on a regular basis to man part of the Coast and A.A. defence.

In other parts of the Empire also local personnel are being employed. The establishment of Indian and local troops in defended ports outside India in 1937 was 3,766, and will be, during the coming year, 9,500. Increases in armament, in reserves of warlike stores and food, are on a similar scale.

Strategic Reserves

In order to secure the freedom of manœuvre of the fleet and to reduce to a minimum the calls upon it for escorts :—

(*i*) Defences of overseas ports are to be strengthened as above.

(*ii*) Strategic reserves are to be formed as under :—

The Middle East Reserve : At present this includes the two divisions stationed in Palestine, each consisting of two brigades of four battalions. This reserve is to be regarded as a separate force, freed from the necessity of drawing on home resources.

Field Force : This force, trained and equipped to meet the event of war in a European theatre, is composed as under :—

(*i*) *Troops of all Arms* :
13 Infantry Divisions (4 Regular, 9 Territorial)
3 Motorised Divisions (Territorial)
3 Armoured Divisions (2 Regular, 1 Territorial)
2 Cavalry Brigades (Territorial)
A number of unbrigaded units (Regular and Territorial).

(*ii*) *Armoured Divisions* :—Based at present on three brigades, of three regiments or battalions, all armed with tanks. There are two kinds—the light tank and the cruiser tank. The quota of cruisers will be increased. This reinforcement will allow, while retaining the same punch, the reduction of brigades in an Armoured Division from three to two. A second Regular Armoured Division will be formed by using in it the brigade released from the first Armoured Division and adding another brigade. Taking into account the Armoured Division now in Egypt (not included in the Field Force figures) it will be recognised that a formidable land fleet is being built in relation to the size of our Army.

(*iii*) *Infantry Divisions* :—Such is the degree of mechanization that all the ammunition and equipment and half the total personnel of all the Infantry Divisions of the Field Army can be carried at one time.

The Royal Military Academy and The Royal Military College :—The establishment of the Royal Military Academy, Woolwich, is being transferred to the grounds of Sandhurst. In the new Royal Military Academy, Sandhurst, there will be three groups of arms : The Woolwich Group ; the Armoured Group ; and the Infantry Group.

Territorial Army :

New benefits :—(*i*) The numbers of Territorials who can earn extra pay as instructors are to be increased.

(*ii*) The permanent staff is to be strengthened, and permanent artificers are to be allotted to look after mechanical transport.

(*iii*) A staff of full-time ex-regular physical training instructors will be established; this will specially benefit urban units; where necessary kit for both officers and men will be provided.

(*iv*) An additional £130,000 is being allotted for week-end camps.

Auxiliary Territorial Service for Women :—Half the establishment has already been reached.

National Defence Companies :—The establishment of the National Defence Companies, now some 6,500 strong will be raised. In future, they will do six drills a year, and their officers will receive an outfit allowance.

Reserves, Recruiting and Mobilization

This year a proportion of the regular reserves—1,000 officers and 16,000 other ranks—will be called up. The officers will be invited—for no compulsory authority exists—to take a course of about 14 days; other ranks will serve for 12 days; alternative dates will be offered. Both officers and men will draw the pay of their rank, allowable by the Royal Warrant for Pay. About 500 officers of the Territorial Army and some of the officers of the Officers' Emergency Reserve will be offered similar facilities.

On 1st January, 1939, effectives of all ranks, exclusive of British troops in India and Burma, totalled 531,353, representing an increase of some 83,000 in twelve months.

Regular Army :—(*i*) Some 40,000 recruits have been enlisted in the current financial year—a period when the demands of the Navy and Air Force have been more than doubled since 1936.

(*ii*) The shortage was 16,000 on the present establishment on 31st March, 1939. A slight improvement in recruiting would overtake this in the next financal year, despite the increase in establishment which is being made.

Territorial Army :—(*i*) This Army is actually over the establishment authorised at the beginning of the financial year 1938–39; this has never been the case in peace before.

(*ii*) With 77,000 recruits in twelve months, compared with 45,000 in the previous year, recruiting has easily broken all records since the foundation of the Territorial Force.

(*iii*) Here also the establishment is being raised to approximately 250,000. (Since the publication of the estimates, this figure has been increased to 450,000).

Mobilization :—Regular Recruiting Offices will be closed on the first day of mobilization. By the third or fourth day after mobilization, 200 centres will be opened, and these will serve all the fighting services. While these Centres are being established, recruiting will be carried out at Territorial Army drill halls. All arrangements for these centres have been made, and the British Legion have offered their help in providing the extra army recruiters and clerks.

All recruits after mobilization, except those who undertake a normal engagement, will be enlisted in the Territorial Army for the duration of the war. Training units for all arms of the Army will be set up immediately; these units will receive their recruits from the Recruiting Centres. All arrangements for Training Units have been made.

If found necessary to send the Field Force overseas, it would have to be despatched in echelons at serial dates. Productive arrangements made in peace

must be sufficient to equip and maintain each echelon of the Force as it is deployed. By the time the last of the serial dates is reached, new forces should have been trained and equipped.

Formation of the Royal Armoured Corps

The Secretary of State for War, in answering a question in the House of Commons on Tuesday, 4th April, 1939, announced the formation of a new Corps, to be designated "The Royal Armoured Corps," with precedence in the Army immediately before the Royal Regiment of Artillery. In describing the considerations which have led to the decision to constitute this new Corps, Mr. Hore-Belisha explained that it involved rather an association between, than an amalgamation of, the mechanized regiments of the Cavalry of the Line with the Royal Tank Corps. He laid emphasis on the fact that it was desired that the Cavalry regiments, with their famous history, and the Royal Tank Corps, with its short but splendid past, should continue with their traditions unimpaired and their battle honours remembered. He further announced that the designation of the Royal Tank Corps would be changed to "The Royal Tank Regiment," and that His Majesty was graciously pleased to become its Colonel-in-Chief. In addition, he explained that to the Royal Armoured Corps will belong the eighteen regiments of the Cavalry of the Line, which are already or are about to be mechanized, as well as all the units of the Royal Tank Corps, both Regulars and Territorial Army. All units are to keep their old designations and distinctions and are to retain their badges; nor do the proposals in any way touch the position of Colonels-in-Chief, Colonels Commandant and Colonels of Regiments, except as described above.

Further details are as follows: All Regular units (except 1st The Royal Dragoons and The Royal Scots Greys (2nd Dragoons) of that Corps will be equipped with armoured vehicles analogous to those of units of the Royal Tank Corps. It is, therefore, necessary that the soldiers of all mechanized cavalry regiments and tank battalions should be trained and administered similarly as far as possible, and also, that all such units of the Regular Army serving at home, should share with one another the responsibility of providing drafts of trained soldiers for such units abroad.

For the present, officers will remain, or be gazetted to separate regimental lists as heretofore, unless and until they voluntarily accept liability to serve elsewhere. All majors of units of the Royal Armoured Corps will be equally eligible for consideration for selection as the commanding officers of any unit of that Corps.

As regards Regular soldiers, enlistments for the Royal Armoured Corps will begin as soon as possible, and those enlisting therein will be liable to serve in any Regular unit of the Corps, either at home or abroad. Soldiers belonging to the cavalry regiments transferred to the Royal Armoured Corps will be transferred to the new Corps and posted to one of its cavalry units or to the Depot; but in peace time they will not be legally liable, without their consent, to serve in any but Regular cavalry units or the Depot of the Royal Armoured Corps during the period of their current engagement with the Colours. Similarly, Regular soldiers of the Royal Tank Corps serving at the date of transfer will be transferred to the Royal Armoured Corps, and may be posted to any Regular unit of the Royal Tank Regiment or to the Depot; but in peace time they will not be legally liable to serve, without their consent, in any other unit of the Royal Armoured Corps during the period of their current engagement with the Colours. On completion of the period of their current engagements with the Colours, however, Regular soldiers of

the new Corps, who originally enlisted in the Cavalry of the Line or in the Royal Tank Corps, will be required to agree to serve in any unit of The Royal Armoured Corps, as a condition of prolongation of Colour Service.

No change in the existing conditions of service, etc., of Supplementary reservists or of men of the Territorial Army is involved.

The cavalry regiments which are to become units of the new Corps will be relieved of the responsibility for training recruits, which responsibility will be transferred to a Mechanized Cavalry Depot. Ultimately, all recruits for the Royal Armoured Corps will be trained together at one Depot, and will undergo a course common to soldiers of all units of that Corps. For the present, there will be no change in clothing.

The following units comprise The Royal Armoured Corps :—

1st King's Dragoon Guards.
The Queen's Bays (2nd Dragoon Guards).
3rd Carabiniers (Prince of Wales's Dragoon Guards).
4th/7th Royal Dragoon Guards.
5th Royal Inniskilling Dragoon Guards.
3rd The King's Own Hussars.
4th Queen's Own Hussars.
7th Queen's Own Hussars.
8th King's Royal Irish Hussars.
9th Queen's Royal Lancers.
10th Royal Hussars (Prince of Wales's Own).
11th Hussars (Prince Albert's Own).
12th Royal Lancers (Prince of Wales's).
13th/18th Royal Hussars (Queen Mary's Own).
14th/20th King's Hussars.
15th/19th The King's Royal Hussars.
16th/5th Lancers.
17th/21st Lancers.

All units at present forming part of the Royal Tank Corps, Regular and Territorial Army (which will be re-designated the " Royal Tank Regiment ").

The need for a change of organization of armoured units was emphasized in ARMY NOTES for February, 1936, p. 203. The views then expressed were challenged by authority, but, with the march of time, the change has had to be brought about.

NEW CONDITIONS OF SERVICE

ADMISSION TO THE MILITARY CADET COLLEGES :—With effect from the Army Entrance Examination in June, 1939, inclusive, candidates who are in possession of Higher School Certificates with special qualifications in mathematics and science may be admitted to the Royal Military Academy or the Royal Military College without taking the written papers of the Army Entrance Examination, provided that they are recommended by their Headmasters, and are accepted by the Interviewing and Medical Boards.

As the fees are assessed entirely according to the means of the parents or guardians, it is now possible for any candidate between 18 and 19 years of age, who has the necessary qualifications, to obtain a cadetship at the Royal Military Academy, Woolwich, or the Royal Military College, Sandhurst, without sitting for a competitive vacancy at the Regular Army Examination, with a view to obtaining a commission in the Regular Army.

PROMOTION OF OFFICERS.—The Military Secretary to the Secretary of State for War, Lieut.-General W. D. S. Brownrigg, in a series of lectures to the assembled officers in practically all the garrisons of the United Kingdom, explained that it was inherent in the new conditions of service that no single individual in the Army would be allowed to draw less emoluments than he was drawing before the reforms came in.

He compared the conditions of service in the Royal Navy with those obtaining in the Army before the introduction of the reforms and proved mathematically that a boy joining the Navy had twice the chance of becoming an Admiral as the soldier had of becoming a General.

He emphasized that the acceptance of the reduction in tenure of Command and Staff appointments from four years to three should be regarded as a real gesture of generosity on the part of officers holding four-year tenures to their less fortunate juniors and declared that, when the time came, such officers would practically all be assured of the maximum rate of retired pay for their rank and, in many cases, more speedy promotion to a higher rank.

ARMY EDUCATIONAL CORPS.—As foreshadowed by the Secretary of State for War in his speech introducing Army Estimates on 8th March, the names of twenty-one Captains of the Army Educational Corps appear in the *London Gazette*, 28th March, as having been promoted to Major after twelve years service in the lower rank. Before the introduction of this reform, promotion to the rank of Major in the Army Educational Corps was by vacancy and such vacancies occurred but rarely. Officers of the Army Educational Corps are not required to retire until they reach the age of sixty. This fact explains why A.E.C. officers serve for twelve years as Captains, as compared with eight years total service for Captains in the combatant branches, in which officers are retired at forty-seven years of age if not selected for promotion to Lieutenant-Colonel.

COURSES OF INSTRUCTION FOR OFFICERS :—In his recent Estimates speech, the Secretary of State for War announced that, after leaving the Royal Military Academy, Sandhurst, officers would, at suitable intervals, take new courses to be established so that their training would follow henceforward a natural sequence throughout their service. The following courses are accordingly projected :—

Subaltern Officers' Course :—An officer's military education begins at one of the Royal Military Colleges. These—the Royal Military Academy, Woolwich, and the Royal Military College, Sandhurst—will in due course be brought together and accommodated at Sandhurst under the new regulations.

At a suitable interval after leaving the Royal Military Colleges, every subaltern officer will be required to take a course at an Army school in the weapons with which his branch of the Service is armed. In the case of technical arms, these courses will provide advanced instruction in technical subjects, and will be of long duration. For example, a subaltern of the Royal Engineers takes a two-year course at Cambridge, at the conclusion of which he is expected to take an Honours Degree in the Mechanical Sciences' Tripos. In every case, however, the aim of these courses is the same—to fit the individual officer to take command of his sub-unit in peace or war.

Tactical School for Captains :—The establishment of this school is a further step in the general policy of accelerating military education so as to ensure that Army officers shall, in future, qualify for higher command at a comparatively early age. Not only will individual officers obtain their commanders' training much earlier than was the case with the Senior Officers' School, shortly to be abolished, but an

increasingly large pool of trained officers will become available to the Army for much longer periods than at present.

A recent review of the present system of promotion examinations has drawn attention to the undesirable tendency of candidates to resort to "cramming." This is particularly apparent in written papers on tactical subjects. Indeed, some candidates have presented themselves for examination in military history equipped with a crammed knowledge of the lessons of the set campaign—the standard textbooks on which they have made little or no personal study—thereby defeating the whole aim of the examination. One of the objects of this school being to test the fitness of individual officers for promotion, the present practical and written examinations for promotion to Field rank will be abolished.

The other aims of the school are tabulated below :—

(*a*) To designate and inculcate sound technical principles in accordance with modern requirements.

(*b*) To teach officers how to teach and to give them practice in the conduct of tactical exercises.

(*c*) To give instruction to officers in the administration of the Army.

(*d*) To give officers of all arms an opportunity of exchanging ideas on matters connected with the training and administration of units.

All combatant officers of the Regular Army with not less than twelve years' service and who have not passed the Junior Wing of the Staff College will be required to attend. Each year there will be three courses of ten weeks' duration for Regular Army officers, and two courses of two weeks' duration for Territorial Army officers. There will be vacancies for about 100 officers in each course.

Higher Commanders' Course :—A course will be established at Aldershot and Old Sarum for selected officers of the Regular and Territorial Armies of the rank of Lieutenant-Colonel and upwards for training in the duties and responsibilities of higher command. They will be given instruction in the latest forms of organization, in the tactical handling of the latest equipment and in strategical doctrine. Arrangements have been made for selected Naval and Royal Air Force officers to be attached to the part of the Course which will take place at Aldershot, in order that strategical co-operation may be studied in the most practical manner.

As the necessity for the co-operation of Armies and Air Forces in modern war cannot be over-emphasised, at the latter part of the Course, which will take place at Old Sarum—a Royal Air Force centre—sixteen Royal Air Force officers will join the Course in order that Army officers may have the benefit of their experience in studying common problems. There will be lectures and discussions on air strategy and tactics and the handling of Air Forces working in conjunction with Field Forces overseas. The latest types of aircraft and their tactics will be demonstrated. It is hoped that the experience gained at these Courses will provide senior Army officers with a valuable addition to their present training. It will be seen that in these ways the Army officer's career now becomes a graduation, continuing throughout his service in increasing knowledge of the principles of his profession.

OFFERS OF SERVICE :—The War Office announces that whilst it greatly appreciates the response to the National Service campaign and the large increase in offers of service that have been received during the past few days, it would be much appreciated if volunteers offering themselves for any form of military service would apply for one of the particular services described in the National Service Guide, i.e., Regular Army, Supplementary Reserve, Infantry Supplementary Reserve, Supplementary Reserve of Officers, Territorial Army, National Defence Companies,

Auxiliary Territorial Service (for women), Officers' Emergency Reserve and the Officer Cadet Reserve. Members of the public who, therefore, wish to place their services at the disposal of the War Office are asked to study carefully the conditions for each service and then apply for the particular one which they wish to join and for which they appear to be eligible. This will ensure that their services are utilised to the best advantage should they be required.

Training

The principal features of the training programme for 1939 are :—

(*i*) The 1st and the 2nd Divisions will carry out brigade and divisional training in an area round Aldershot, which, thanks to the public spirit of the local authorities, will be again placed under the Manœuvres Acts.

(*ii*) The 3rd and the 4th Divisions will conduct brigade training on Salisbury Plain and in East Kent without recourse to the Manœuvres Acts.

(*iii*) Selected formations of the 4th Division will also co-operate with the Royal Navy and the Royal Air Force in a combined landing operation on the East Coast.

(*iv*) In September the 1st Corps, consisting of the 1st and the 2nd Divisions, having been brought up to war strength, will move by road and rail under war conditions to Yorkshire where it will engage an enemy force consisting of the 5th Division and Territorial troops. For these operations a large area in Yorkshire will be placed under the Manœuvres Acts. The Royal Air Force will co-operate throughout.

Training of Reserves :—Opportunities for bringing a certain proportion of reserves up-to-date will be afforded during 1939. It is intended :—

(*a*) To invite certain officers of the Regular Army Reserve of Officers to volunteer for training ;

(*b*) To call up for training a certain proportion of reservists in Sections A, B and D of the Army Reserve, in their 2nd, 3rd, and, if necessary, 4th year of reserve service.

With regard to (*a*), it is proposed to issue invitations to a number of officers of Mechanized Cavalry, Royal Artillery, Royal Engineers, Infantry of the Line, and Royal Army Service Corps, affording them an opportunity to bring themselves up-to-date, either in their mobilization appointment or by attachment to their units for some period during the collective training season. Priority will be given to the training of officers in Class I of the Regular Army Reserve of Officers, but certain officers in Class II will also be invited. No officer, who volunteers for such training, will be accepted unless physically fit at least for service at home. Wherever possible the examination as to fitness will be carried out by a military medical officer. All officers undergoing such training will be entitled to receive pay of their rank under Royal Warrant, Article 518, and will be issued with a warrant to and from their homes.

With regard to (*b*), reservists will be drawn from Mechanized Cavalry (except Armoured Car Regiments), Royal Artillery, Royal Engineers, Royal Corps of Signals, Foot Guards, Infantry of the Line, and Royal Army Service Corps. Reservists of the Royal Artillery (Field and Medium Branch) Royal Army Service Corps, and certain reservists of the Royal Corps of Signals, will be called up to take part in Army manœuvres, to be held in September. The remainder will be called up for training with their own units or with units of the same arm of the service. In no case will such training exceed twelve days. Training is compulsory, but, except

for those reservists proceeding on Army manœuvres, each reservist will be offered the choice of two periods, in order that he may have a better chance of meeting his employer's wishes than if he were given one rigid date. Reservists will draw the pay of their rank while undergoing training, and will be issued with clothing and necessaries.

In addition to the above, it is proposed :—

(*a*) To attach to Regular formations during the training season, a certain number of unemployed Territorial Army Colonels. Pay and allowances will be issued during such training.

(*b*) Commands at home will arrange for the training of a certain number of Territorial Army Reserve officers who are likely to be employed in an active capacity on embodiment. Such training will take the form of week-end exercises, tactical exercises with troops, lectures, etc. Out-of-pocket expenses will be refunded. A proportion of these officers will be given the opportunity to attend annual camp. Pay and allowances of their rank will be issuable for the period of the camp.

THE NEW DRILL.—To meet the tactical requirements of the modern infantry organization a new drill has been evolved based on a foundation of " threes." The recruit, Regular or Territorial, will learn during his training on squad drill every movement that is necessary for both Field training and Ceremonial. Time will thus be saved for devotion to the many other forms of training needed by modern infantry. " Forming fours " is no longer needed. The new drill is based on the organization of three Sections in each platoon, and three platoons in the company. To provide the necessary room for a man to take a full pace when moving to a flank, the files (each of three) dress at arm's length. The march past is carried out by platoons, and not by companies as was done in the old drill. Further simplifications have been introduced into arms and sword-drill.

Drill is still an essential part of the training of any unit, and there is no doubt that the new drill will prove as smart and impressive as that performed in the past. His Majesty the King witnessed a demonstration of the ceremonial portion of the new drill on Wednesday, 8th March, 1939. It is expected that the drill will be introduced for the Foot Guards and Infantry of the Line, both Regular and Territorial, during April, 1939 ; a similar type of foot drill will be adopted at a later date by other arms.

TERRITORIAL ARMY

ESTABLISHMENT DOUBLED :—Mr. Neville Chamberlain, the Prime Minister, announced in the House of Commons on 29th March, 1939, that the Territorial Field Army, now on a peace establishment of 130,000 men, was to be raised forthwith to war establishment by the addition of 40,000 men. The augmented figure would then be doubled making the establishment 340,000 men. Mr. Hore-Belisha, Secretary of State for War, explained later that the figure of 340,000 would be in addition to the Air and Coast Defence Troops, which were to be raised to 110,000, making a grand total for the T.A. of 450,000 men. The T.A. component of the Field Force will thus consist of eighteen Divisions, six motorized Divisions and two Armoured Divisions.

In an appeal for recruits by the Director of Public Relations, it was explained that these measures involved the immediate recruitment of 210,000 men and the abolition of waiting lists. Though recruits could be accepted up to the age of 38, the most urgent need was for young men of 18 to 25 for the Field Force. Older

men were recommended to enlist in anti-aircraft units wherever vacancies were available. In the case of the Field Force, all fit applicants would be accepted at once Pending formal Attestation, all men accepted would be issued with a card or other token of membership.

The telegram sent by the War Office to Territorial Army Associations authorising the increase to War establishment of the Field Force of the Territorial Army was in the following terms :—" All units of the following arms of the Territorial Army Field Force will recruit forthwith to War establishment : Royal Artillery, Royal Engineers, Royal Corps of Signals, Infantry and Royal Tank Corps. Yeomanry will recruit to 60 per cent. over present peace establishment. Royal Army Service Corps will recruit to 50 per cent. of war establishment."

Recruiting :—The total strength of the Territorial Army, all ranks, on 1st March, 1939, reached the exact figure of 212,000. The intake of recruits for February was 9,921, a monthly figure only once exceeded in April, 1938.

The Auxiliary Territorial Service for Women has enrolled 2,684 officers and members and the strength is 8,877 compared with an establishment of 20,843 all ranks.

Recruitment for the five Divisions of the Anti-Aircraft Corps has been progressing satisfactorily. The highest percentage of 105.6 of establishment was reached by the 1st A.A. Division and the lowest of 70.7 per cent. by the 3rd A.A. Division. The total number of men in the 1st A.A. Corps, on 1st March, was 74,799.

Command of Anti-Aircraft Formations :—The following changes in the higher command of the Anti-Aircraft formations, Territorial Army, took effect from 24th March, 1939 :—

(*a*) The designation of the appointment of the Deputy Chief of the Imperial General Staff (Coast Defence and Anti-Aircraft), at present held by Lieutenant-General J. H. Marshall-Cornwall, is to be changed to that of Director-General, Air and Coast Defence, War Office.

(*b*) The 1st Anti-Aircraft Corps, Territorial Army, is to be converted into an Army Command and its Commander, Lieutenant-General A. F. Brooke, will become General Officer Commanding-in-Chief, Anti-Aircraft Command, Territorial Army.

Commissions :—Applicants for Commissions in the Territorial Army are reminded that they should apply direct to the Officer Commanding the unit they wish to join, or, alternatively, to the Territorial Army Association which administers that unit. Applications cannot be dealt with by the War Office in the first instance. All information in regard to vacancies, terms of service, etc., should also be obtained from Territorial units or Territorial Army Associations. Addresses of these can be obtained from local telephone directories under the heading " Territorial Army."

Territorial Army Soldier's Pocket Book :—The procedure on the calling out for service of the Territorial Army has been greatly simplified and a new method of documentation introduced, the basis of which is a pocket book (Army Book 3), which will be in the possession of every Territorial Army Soldier. Issue of the pocket book to units will commence in the course of a few days, and the new method of documentation will come into force in each unit as soon as that unit has completed the issue of the pocket book to personnel. The object of the pocket book is to ensure that every Territorial Army soldier has in his possession full information as to procedure in the event of his being called out for service, and to furnish facilities for the recording in peace of National Health Insurance and Unemployment Insurance particulars to enable such insurances to be resumed on release from service.

EIRE

The strength of Eire's Army is to be increased and the Army estimates practically doubled for the ensuing financial year. Mr. Frank Aiken, Minister for Defence, introducing the estimates, announced that the establishment of 1,456 officers and 28,066 other ranks showed an increase of 3,614 of all ranks.

The vote for £3,300,000 included £1,383,000 for capital items, such as aircraft, ammunition, artillery equipment, searchlights, guns and spares. Arrangements were being completed for the erection of an ammunition factory. Last year's vote amounted to £1,672,000.

INDIA

APPOINTMENTS:—Lieutenant-General Eric de Burgh, C.B., D.S.O., O.B.E., Indian Army, to be Chief of the General Staff, India; with effect from 31st May, 1939.

Major-General C. D. Noyes, C.B., C.I.E., M.C., Indian Army, has been appointed Deputy Quarter-Master-General, Army Headquarters, India, with effect from 29th April, 1939, and not as stated in ARMY NOTES for February, 1939, page 212.

INDIANIZATION:—The progress of Indianization of the Commissioned Ranks of the Regular Indian Army and, in particular, the supply of suitable cadets to the Indian Military Academy, has in some respects not proved altogether satisfactory. A Committee under the chairmanship of Lieutenant-General Sir Roger Wilson, Adjutant-General in India, has been formed to study the question of recruitment of Indian Army Cadets and will go on tour during the summer. The object of the tour is to study Indianization in all its aspects and to consider such alterations in the system of recruitment to the Indian Military Academy as may be expected to lead to an improvement in the number of suitable candidates. The members include Captain Sardar Sir Sher Mahommed Khan, Captain Sardar Bahadur Dalpat Singh, Lieutenant-Colonel M. A. Rahman and Brigadier R. D. Inskip, Commander, 1st (Abbottabad) Infantry Brigade.

AIR CO-OPERATION WITH THE ARMY:—An outstanding example of effective co-operation between the R.A.F. and the Army has been reported from the North-West Frontier. On the night of 5th February, 1939, an outlying post of the Tochi Scouts at Datta Khel was attacked by a mixed *lashkar*, consisting chiefly of Madda Khel Wazirs, backed up by a few members of the Kabul Khel. The *lashkar's* strength was over 100, and it was armed with two tribal cannon. In addition to heavy rifle fire, fifteen shells were fired by the guns, two of which hit the post and exploded, but caused no casualties.

A wireless signal was sent off at midnight from the beleaguered post to the Tochi Scouts' headquarters at Miran Shah, asking for air assistance. A detachment of No. 20 (A.C.) Squadron, R.A.F., at Miran Shah and an Audax aircraft at once prepared to fly to the aid of the post. The aircraft took off shortly after 2 a.m. It was a moonlight night and visibility was fairly good. Owing to the possibility of sniping on the landing ground, the aircraft had to be started up inside the fort by the aid of searchlights mounted on the walls and taxied out quickly through the gates to take off.

On the plane's arrival over the invested post, white ground strips, lit by lamps, were displayed by the Scouts in order to indicate the enemy's gun positions. Air action was at once taken by the pilot which effectively silenced the guns. The aircraft then returned to Miran Shah and executed a night landing, using wing-tip flares. It is said that the arrival of aircraft during this attack took the *lashkar* completely by surprise.

Two nights later, the Datta Khel post was again attacked by the same *lashkar* with gun and rifle fire. In response to calls for assistance, three more sorties were carried out by aircraft from 2 a.m. until dawn. Effective air action was again taken against the enemy with the help of parachute flares, which were dropped to disclose their positions. These are believed to be the first instances of aircraft taking close support action over posts in tribal territory by night.

Squadron Leader R. C. Mead, No. 20 (A.C.), Squadron, R.A.F., who piloted the plane which was sent to the aid of the raided outpost, has been awarded the Distinguished Flying Cross for his part in the action. The communiqué states that his flight was " a splendid example of skill and devotion to duty under fire."—*Associated Press.*

FOREIGN

FRANCE

Important increases in the strength of the French Army are announced in the *Journal Officiel*, which publishes a series of decree laws signed by President Lebrun. The number of commissioned officers in the Army will be raised from 30,638 to 31,060 not including General officers, officers engaged on munitions production and gendarmerie officers. The cadre of professional N.C.O.s will be increased at once by 2,500. Junior officers of cavalry are to be invited to transfer to the artillery, where their services are urgently required.

Two new General Officers have been appointed to the Supreme War Council in place of two officers who are retiring. The new officers are General Bourret, Commander of the Military Region of Paris, and General Giraud, Military Governor of Metz. General Gamelin's period of active service is to be extended to the age of 70—he is now 67—and he will retain his post as Chief of the General Staff of National Defence. He will be assisted by General Georges, Assistant Chief of the General Staff and Member of the Supreme War Council, who will be Commander-in-Chief of the Army in case of war. The other members of the Supreme War Council are : Marshals Pétain and Franchet d'Espérey, Generals Billotte, Noques, Colson, Condé, Besson, Blanchard, Huntziger, Bührer, Garcheny and Réquin.

The Commands of the frontier districts are to be reorganised, and special measures are to be taken to reinforce the garrisons of the fortified region of Metz and also of Chalons-sur-Marne, Nancy and Strasbourg.

Ties with Great Britain are to be strengthened by the visit to England of over sixty members of the National Union of Reserve Officers in France under their President, General Weygand. The party, who are coming to England at the invitation of Lord Derby and the United Associations of Great Britain and France, will arrive on 12th May, 1939, at Southampton, where they will be the guests of the Mayor. After visiting Portsmouth, Birmingham and Stratford-on-Avon, the party will go on to Scotland.

The period of military service is to be increased from twenty-four to twenty-seven months. This extra period will enable the Army to remain at full strength in trained men during the autumn, a time when the ranks are normally filled with newly incorporated conscripts. This year, as a special measure, 25,000 men were called up for their military service in April, six months ahead of time. The Ministry of Defence may also call up, if necessary, certain classes of reservists for a period of forty days for private soldiers and fifty days for officers and N.C.O.s.

The number of military engineers in the arsenals is to be increased and any military engineers who have once done service there are liable to recall for further service.

According to M. Mandel, the Minister for Colonies, the strength of the French Colonial Army has recently been doubled and special measures have been taken to safeguard Jibuti against a surprise attack. More North African levies have been raised and steps taken to organize and train Colonial man power.

These several measures, which are the first fruits of the plenary powers conferred on M. Daladier, the Prime Minister, by the French Parliament have done and will do much to render France safe against aggression from any quarter.

GERMANY

The German Army is making strenuous efforts to bring its reserves of trained man power up to the level of those of France and hopes to add 300,000 trained men to its reserves during the coming year. In accordance with a decree issued by General Keitel, Chief of the German High Command, and Dr. Frick, Minister of the Interior, all men born in 1913 or earlier who have not yet reached the age of 35, but were too late to serve their two year period of military conscription, will be given twenty-eight weeks' special training. They will then become reservists of the second class, and as such, receive thirty-six weeks' further training. In some cases these two periods will be practically continuous. On reaching the age of 35, men are drafted to the Landwehr, where they serve until 45 years of age, and if living in East Prussia will receive sixteen weeks' training. The provision for extra training for men of the Landwehr living in East Prussia shows that the lessons of 1914, when the Landwehr did splendid service before and during the battles of the Masurian Lakes, have not been forgotten. The total strength of the 1906 and 1907 classes may be estimated at 600,000 men. It appears that, by the end of this summer, at least half of this number should be added to the trained reserves of the German Army.

SOVIET UNION

Marshal Voroshiloff, Commissar for Defence, in an address to the 18th Congress of the Communist Party held at Moscow lately, announced remarkable increases in the strength of the Soviet Army. " The U.S.S.R.," he declared, " is under constant threat of military attack to a far greater extent than any other country. The second Imperialist war for a new re-division of the world is already ablaze."

The size of the Army, he said, had been more than doubled during the operation of the last five-year plan. The frontier defences had been radically improved and the numbers of special troops for these fortified areas considerably increased. The Red Army, he continued, included ten times as many Divisions as there were five years ago.

An Infantry Division consisted of 18,000 men and an Army Corps of 60,000. The fire power of a Red Army Corps, he emphasized, exceeded that of either a French or German Army Corps, and amounted to seventy tons of metal per minute compared with fifty-four tons and fifty-three tons for French and German Corps, respectively.

UNITED STATES

MANUFACTURE OF TANKS :—" Mechanization means being stingy with blood and lavish with steel." These views are put forward in an article entitled " Manufacture

of High-Speed Tanks," by Major J. K. Christmas, published in *Army Ordnance*, January–February, 1939. The author draws a distinction between the two terms " motorization " and " mechanization," and explains that the latter refers to the use of motor *fighting* vehicles only. He claims that men are, in war as in industry, the most expensive item on the ledger and asserts that the initial cost of a light tank in quantity production is about equal to the grand total cost of *one* fighting soldier. Further, when a tank becomes a casualty the account is definitely closed. A soldier, on the other hand, if wounded has to be looked after in hospital and possibly pensioned; and if he is killed, his dependents have—quite justly—to be succoured by the State.

The present engineering status of the tank is that all industrial nations are building tanks that are reliable mechanically, simple to operate, capable of movement under their own power with an Army everywhere, well armoured, heavily armed and reasonably durable. On recent field exercises held in the U.S.A., eighty-eight tanks started and eighty-eight returned under their own power from a 700 mile operation over roads and cross-country terrain of various conditions. Both the initial and the operating costs of tanks have come down markedly. The costs of U.S. Army tanks—produced in only limited quantity—amount to about five shillings (at par of exchange) per pound weight, without armament, and about six shillings and sixpence per pound, if the armament be included. The percentage of the total weight of a light tank taken up by the various components is approximately as follows :—Armour plate, 32 ; suspension, 15 ; tracks, 12 ; transmission, 6 ; final drive, 6 ; engine, 5 ; crew, 4 ; ammunition, 4 ; fuel, 2 ; armament, 2 ; miscellaneous, 10 ; The following industries contribute principally to the construction of a tank : steel, engine, automotive parts (transmission), motor accessories, aeroplane accessories, rubber, anti-friction bearings, electrical, aluminium and radio. The chief raw material involved is steel, with rubber a close second in its relative importance to the efficiency of the vehicle but not, of course, in respect of the quantity used.

Only those nations that can command wide resources of industry and raw materials are in a position to build tanks. In the next war, non-industrial nations will be faced with an unpleasant dilemna. Either they must purchase tanks from abroad, thus making themselves largely dependent upon foreign help, or they will have to compensate for their deficiencies in the supply of steel by a lavish expenditure of human life.

ROCKETS :—The present and future developments of rockets for use in warfare form the subject of an article by Mr. J. R. Randolph, writing in the January–February, 1939 number of *Army Ordnance*. Contrary to the opinions of some people, the author considers that rockets are too slow in operation and flight to be of much use as a form of anti-aircraft defence. Nor is he impressed by their possibilities when employed against tanks. Their highest value, he considers, will be reached as a form of ultra long-range artillery for the bombardment of large and vulnerable fixed targets, such as ports or cities. It is theoretically—though not yet practically—possible to conduct such bombardments half around the world, though naturally the expense would be very high. Even in the present state of development he claims that there would be little difficulty in equalling with rockets the performance of the German long-range gun that bombarded Paris from a distance of seventy-five miles.

AIR NOTES

ROYAL AIR FORCE

AIR ESTIMATES

Sir Kingsley Wood, Secretary of State for Air, introducing the Air Estimates in the House of Commons on 9th March, said that the estimated expenditure during the coming financial year exceeded £205,000,000—the largest sum in the history of the Department. This heavy expenditure was due mainly to the large number of modern aircraft now coming into the squadrons, the cost of providing additional manufacturing capacity, and the construction of new stations. This year's figure was about twelve times that in any of the years from 1929 to 1934, and roughly double the aggregate expenditure on the three Defence Services in each of the years 1932 and 1933. The increase this year of some £74,000,000 in a single year, which had come upon a succession of previous increases, was equal to the total of all the Defence Estimates in 1913.

The Secretary of State went on to say that 1st April would be the twenty-first anniversary of the creation of the Royal Air Force as an independent Service, and of the Air Ministry as a separate Department of State. The figures he had quoted were a measure not only of their efforts and their rising strength, but also of the country's recognition of the importance of this new arm of the Services, and its determination to make adequate provision for air defence.

STRENGTH AND ORGANIZATION.—By the end of the financial year 1938, the first-line strength of the Royal Air Force at home has been expanded to 1,750 aircraft in accordance with the programme announced in 1936. In addition, during 1938, plans have been laid, production capacity created and personnel recruited which will form the basis of the further measures of acceleration and expansion announced in May and November of last year.

During the year the organization at home has been strengthened by the creation of three new Commands.

The Maintenance Command is now responsible for the administration of all storage units and depots at home, including many which have been established recently. Considerable responsibility has been delegated from the Air Ministry to the Command, which now deals directly on maintenance questions with the operational and training Commands.

A Balloon Command has also been established to take charge of the administration and training of the forty-seven units in different parts of the United Kingdom now comprised in the balloon barrage scheme: for operational purposes the squadrons remain under the command of the Air Officer Commanding-in-Chief, Fighter Command.

A Reserve Command has been formed to be responsible for the training of all sections of the Volunteer Reserve—pilots, air crews and ground personnel. The Command will also control the elementary flying training schools to which regular personnel are sent for initial instruction before being sent to the service flying training schools.

Overseas, the strength of the Royal Air Force has been increased by three squadrons in the Middle East, and the status of the Commanding Officer has been raised to that of Air Officer Commanding-in-Chief.

PERSONNEL.—To provide the necessary personnel for the manning of the enlarged Force and the continuing expansion during 1939 and 1940, the strength of the Royal Air Force borne on Vote A has risen to about 96,000 as compared with about 30,000 in 1934. During 1939 the strength is expected to rise to 118,000. Increased requirements for air crews have been met by special schemes of direct entry and subsequent training; the number of Airman Pilots has been substantially increased; Air Observers have been given the same status as Airman Pilots. Training establishments have been considerably expanded, and new technical training schools have been brought into being at Cosford (Stafford), St. Athan (Glamorgan), Yatesbury (Wiltshire) and Locking (Somerset).

The enlarged programme for 1938–1940 announced last May involved the recruitment during 1938 of as many personnel as were comprised in the whole Air Force in 1934. Special steps have been taken to bring the requirements to the notice of young men throughout the country, and to draw attention at the same time to the advantages offered by a career in the Royal Air Force. As a result the entry for the current financial year is likely to exceed by some thousands the high figure originally envisaged. The present augmented programme, neverthless, requires during 1939 an entry ten times that of a normal pre-expansion year.

Increases have also been made in the Auxiliary and Reserve forces. The establishments of the flying squadrons of the Auxiliary Air Force have been enlarged and airman pilots have been introduced. The Auxiliary Air Force now includes the balloon barrage squadrons; ten of these units were formed last year for the defence of London, and thirty-seven additional squadrons are now being formed to man balloon barrages to protect other important centres. The pilot strength of the Royal Air Force Volunteer Reserve has increased to over 2,500 and special sections have been formed for administrative, equipment and medical personnel and for air crews and their technical trades. Thirty-five Royal Air Force Companies of the Auxiliary Territorial Service for Women are being formed and will be affiliated to regular or auxiliary units. The Civil Air Guard has been brought into being, and steps are now being taken to categorize its members according to the duties they will perform in emergency. The Air Defence Cadet Corps scheme for boys between the ages of fourteen and eighteen was also successfully launched by the Air League of the British Empire during last year, and has made rapid progress.

MATERIAL.—The expansion and re-equipment of the Air Force is dependent on a very great increase in the production of aircraft, engines, armament and equipment of all kinds. The volume of production is now large. There is a substantial output from the Government factories established in accordance with the policy announced in 1936; this is increasing rapidly. In general, the supply of engines, armament and equipment has kept pace with the delivery of air-frames. Where there have been initial difficulties, arrears have been or are being rapidly overtaken, while arrangements have been made to ensure full deliveries in the future.

Steps were taken during 1938 to create the large additions to productive capacity which will be required to implement the new measures announced in May and November, and to provide the necessary potential for further expansion in the event of emergency. This capacity is being provided partly by the extended use of sub-contracting; partly by additions to existing factories; partly by the erection of new factories to be managed by large engineering firms not previously concerned

with the manufacture of aircraft; and partly by capacity to be developed in the overseas Dominions.

These measures have already produced important results over the whole field of production, and constitute the framework within which a still larger effort will be possible in 1939.

Promotions

The following promotions were made with effect from 1st April, 1939:—

Air Commodores to be Air Vice-Marshals.—G. R. M. Reid, D.S.O., M.C.; R. M. Hill, M.C., A.F.C.; A. G. R. Garrod, O.B.E., M.C., D.F.C.; C. W. H. Pulford, O.B.E., A.F.C.

Group Captains to be Air Commodores.—R. Collishaw, D.S.O., O.B.E., D.S.C., D.F.C.; H. G. Smart, O.B.E., D.F.C.; H. V. Champion de Crespigny, M.C., D.F.C.; A. J. Capel, D.S.O., D.F.C.

Wing Commanders to be Group Captains.—F. O. Soden, D.F.C., C. E. H. James, M.C., J. Noakes, A.F.C., M.M., F. J. Vincent, D.F.C., A. Durston, A.F.C., F. G. Stammers, O.B.E., H. W. Evens, C. S. Richardson, M.B.E., H. E. P. Wigglesworth, D.S.C., E. J. Cuckney, D.S.C., H. J. Roach, O.B.E., A.F.C., D. F. Lucking, E. J. D. Townesend, E. B. C. Betts, D.S.C., D.F.C., W. S. Cox, M.C., A.F.C., C. R. Keary, G. H. Boyce, A.F.C., H. W. L. Saunders, M.C., D.F.C., M.M. (Acting Group Captain), L. N. Hollingshurst, O.B.E., D.F.C. (Acting Group Captain), A. P. M. Sanders, R. P. M. Whitham, O.B.E., M.C. (Acting Group Captain).

Honours and Awards

The King has been graciously pleased to approve the following awards:—

Distinguished Service Order.—Squadron Leader N. C. Singer.

Distinguished Flying Cross.—Flying Officer (Acting Flight Lieutenant) F. C. Hopcroft.

Appointment

The following appointment has taken effect from the date shown:—

Air Marshal.—C. L. Courtney, C.B., C.B.E., D.S.O. as Air Officer Commanding, Reserve Command, 14th March.

Personnel

Attachments of Foreign Officers for Courses.—Captain I. O. D. Berg, Swedish Air Force, was attached from 1st February to 9th March; Lieutenant Boris Ivanov Popov, Bulgarian Air Force, has been attached to the Central Flying School, Upavon, since 23rd January; Lieutenant Kriangkrai Inkavanij, Siamese Royal Air Force, has been attached to the Royal Air Force Station, Feltwell, since 27th February; Lieutenant Manop Souriya, Siamese Royal Air Force, was attached from 16th December to 19th February.

General

Empire Air Day.—The sixth Empire Air Day will be observed on Saturday, 20th May at seventy-eight aerodromes, including sixty-three Royal Air Force Stations, as compared with fifty-eight last year. This is the largest number that has ever been open to inspection by the public. Stations will normally be open from 2 p.m. until about 7 p.m. The programme at each station will include flying displays provided by local units, supplemented, in many cases, by demonstrations of aircraft from other stations.

This year marks the " coming of age " of the Royal Air Force, which came into being on 1st April, 1918. The public will be afforded the opportunity of witnessing the performance of the latest types of monoplane fighter and bomber aircraft now in service. Several types of aircraft will be available for inspection at most stations, and the workshops, hangars, mess-rooms and barrack-rooms will also be open to the public.

Officers Emergency Reserve

War Employment.—Arrangements are being made to appoint to the Administrative and Special Duties Section of the Royal Air Force Volunteer Reserve such members of the Officers Emergency Reserve as are willing and can be immediately earmarked for emergency employment. The number of members that can immediately be absorbed in this section of the Volunteer Reserve is limited, but additional appointments will be made, from time to time, as the scheme develops.

The names of members of the Emergency Reserve who have offered themselves for transfer to the Volunteer Reserve, but for whom there are not vacancies at the moment, will be duly noted and this list will be drawn upon as occasion demands.

Royal Air Force Recruiting

The following is a summary of the progress made with recruiting under the expansion of the Royal Air Force :—

Since the 1st April, 1938, approximately 34,500 personnel, including pilots, observers, airmen and boys, have entered the Royal Air Force. This total compares with 15,584 for the corresponding period of last year. The recruitment of over 31,000 officers and men for whom Sir Kingsley Wood, Secretary of State for Air, appealed last June, was substantially exceeded before time, but recruitment is being continued without a pause against next year's requirements.

Civil Aviation

Empire Routes.—The Secretary of State for Air, speaking during the debate on Air Estimates, said that we are embarking on a larger plan of civil air routes involving a great State expenditure. It is essential that we should do this if we are to secure an adequate share in the development of the vital communications upon which the Empire largely depends, and it is because of that that the Estimates include this year, notwithstanding our military needs, a sum of £4,700,000 for civil aviation. It is nearly three times the sum taken in 1933.

Undoubtedly there is a great deal more to be done so far as civil aviation is concerned. There have been advances which it is as well to register. Until six years ago aircraft employed on regular air transport services throughout the world flew 100,000,000 miles on a network of routes totalling 200,000 miles. In the current year it is calculated that the distance flown by aircraft will be nearer 250,000,000 miles. Six years ago aircraft operated by United Kingdom aircraft companies on regular air services flew 2,500,000 miles and carried 79,000 passengers. In the current year the mileage to be flown by such aircraft will be nearer 11,000,000 miles and the number of passengers will probably exceed 250,000.

Air Mails.—During 1932, one hundred and seventy tons of air mail were carried by British commercial aviation. Last year over two thousand tons were carried in this way and nearly six hundred tons of letter mail were carried on the internal air services, nearly seven hundred and fifty tons on European services, nearly eight hundred and fifty tons on Empire services, and a small tonnage on other extra-European services. The British Empire continues to rank foremost as regards the length of route operated by regular air services, and at the end of 1938 the route mileage for the Empire as a whole was about 88,000 miles.

The importance of civil aviation to the British Empire needs no emphasis. It has already, despite our recent pre-occupation with the rearmament programme, continued to take an increasingly important position in Commonwealth economy, and nothing can stop it taking ultimately the place which its merits deserve, and the difficulties of the present transitional period will pass away with improved organization and improved development.

Civil aviation is in a transitional stage and suffers to some extent from having been forced to take second place to the more urgent activities on the military side, but the completion of the third stage of the Empire air mail scheme, which now makes it possible to carry all first-class mail on the Empire air routes without surcharge is worthy of note. The Empire air mail scheme, with all its imperfections which we are doing our best to overcome, with its special Christmas difficulties and its present troubles in regard to equipment, is an achievement which cannot be paralleled by any other country in the world, but one which the structure of the British Commonwealth makes a necessary item in modern life and one which it is only too easy to accept without reflecting upon the constructive imagination and the vision and labour which lie behind it.

OVERSEAS COMMANDS

ADEN

AIR ACTION AGAINST AUDHALI TRIBE.—During December it was reported that a section of the Audhali tribe, known as the Ahl Am Sha'a, was harbouring a Yemeni who was thought to be guilty of murdering another Yemeni at Beidha The Yemeni authorities had requested that the murderer should be handed over to them for trial, but the Aden Government decided that the murderer, who had for many years lived with the Ahl Am Sha'a in the Protectorate, should be tried by the Audhali Sultan. The political officer who went to Arabah to investigate the matter was unable to persuade the tribe, who are at feud with the Audhali Sultan, to hand over the culprit. It was therefore decided to bring the tribe to submission by occupation of the offending villages by the Sultan's tribal forces, supported by air action if necessary, these forces to remain in occupation until certain hostages were surrendered as a guarantee of the section's future good behaviour. The Sultan was most anxious for this action to be taken, in view of the good effect which firm action of this kind was likely to have amongst the Ahl Am Sha'a.

A time limit was therefore imposed, but as no surrender had been made by the date it expired (January 28th) the usual bombing warning was dropped, expiring at dawn on the 14th February. Air action, in conjunction with the Sultan's forces, was taken on that date, one raid being sufficient to bring about the submission of the offending tribe.

FOREIGN

BELGIUM

AIR DEFENCE.—Under a law passed on the 27th December the Minister of National Defence, General Denis, is authorised to spend 600,000,000 francs (£4,285,000) on active and passive air defence. This sum is included in the Extraordinary Budget, and will be utilized to provide for :—

A considerable increase in the strength of fighter aircraft in the Military Air Service.

Passive air defence measures, including the provision of air raid shelters, etc.

The formation of a new force of anti-aircraft artillery and searchlights. This new force will be distinct from, and not an addition to, the regular anti-aircraft artillery of the Defense Terrestre contre Aeronefs (D.T.C.A.) which is an integral part of the army.

The role of the new force will be the defence of towns and factories, and its personnel will be recruited locally on lines somewhat similar to those which governed the old "Garde Civique" of pre-war days, and they will be required to attend a prescribed number of drills each year like the Territorial Army in England.

Difficulties are anticipated by the Minister of National Defence in providing this new body with its gun equipment quickly, and it is probable that purchase will have to be made abroad, possibly in England or Sweden, although the capacity of Belgian industry for this need is being carefully examined.

FRANCE

AIR BUDGET, 1939.—The French Budget for 1939 was passed into law on 31st December, and the sums allocated for aviation are set out below, together with the corresponding figures voted for 1938. Francs have been converted into £'s sterling at 124.2 to the £, which is considered a truer guide to purchasing values in France than the current rate of exchange :—

(1) AIR MINISTRY.	1939	1938
Ordinary Budget (day to day expenditure) ..	£18,684,270	£12,529,448
Credits d'Engagements. Commitments to expenditure in 1939 not chargeable to Air Votes until 1940 and/or subsequent years ..	£90,950,080	£30,845,410
Extra-budgetary Expenditure. Authorised from general armament fund (air allotment)	£74,162,641	£44,055,958
Total—all provision	£183,796,991	£87,430,816

Note.—Provision for Air Force series material is included in the above figures for 1939 as follows :—

Credits d'engagements	£50,966,192
Extra budgetary expenditure	£46,159,420
Total	£97,125,612

(Total for series material in 1938 was £48,953,301).

(2) NAVAL AIR FORCE, 1939.

Ordinary Budget.—The day to day expenditure on the Naval Air Arm cannot be separated from the general naval day to day expenditure.

Credits d'engagement	£3,067,633[1]
Extra budgetary expenditure	£3,940,737[2]
Total	£7,008,370

[1] Includes provision for series material of	£2,415,459
[2] ,, ,, ,, ,, ,, ,, ...	£3,045,990
Total for (naval) series material	£5,461,449

COMPULSORY SERVICE.—On 31st January the Chamber unanimously adopted two important measures.

The first authorises the maintenance of the two years compulsory military service which was temporarily imposed in 1936 to meet the shortage in the annual classes in the lean years 1936–1940. The unsettled conditions in Europe and the increase in German military effectives have made it necessary for steps to be taken to maintain the French Army at its present strength and to increase the Air Force and anti-aircraft defence units. The new *projet de loi*, however, authorises the Minister of National Defence to return gradually to the old calling up age of 21 instead of the earlier age of 20 gradually imposed since 1936. The second *projet de loi* alters the periods of reservists' training and the Minister is now to have power to call up reservists during a crisis for any period up to three weeks. Exemptions will not be given, and postponements only in very exceptional circumstances.

AERO-ENGINE INDUSTRY.—It is now reported that the present output of the Gnome-Rhone factory in Paris is approximately two hundred engines a month. The 14 N. 21 and 14 M. types are being produced in equal numbers, and while this figure of two hundred a month cannot yet be confirmed as a definite monthly average, it is considered that in a full working month this output should be maintained, provided no labour or other troubles occur.

Labour, it is stated, at present musters 7,000 at the Boulevard Kellermann factory and 3,000 at the Genevilliers factory, and in the machine shops three eight-hour shifts a day are being worked, but in the assembly shops only one, owing to the importance of making one crew of mechanics responsible for the complete assembly of any one engine.

A certain amount of extension is being carried out, and an entirely new building has been added for the manufacture of variable pitch airscrews—based on the Hamilton principle—of which fifty or sixty a month are at present being turned out by two hundred and fifty operatives.

PRODUCTION OF AVIATION FUEL BY HYDROGENATION.—It is reported that the Comité des Carburants have decided to proceed with the building of four factories for the production of high octane aviation fuel, the first at Donges (near St. Nazaire), the second at Pauillac on the Gironde estuary, the third at Martigues (near Marseilles) and the fourth at Decazeville (about 30 miles S.S.W. of Aurillac). All, with the exception of the factory at Pauillac, will be constructed and operated by companies in which the State will have an interest.

The first and second factories will, it is reported, have together a capacity to produce 170,000 tons of spirit a year, using petroleum as the raw material. The Martigues factory will, it is reported, have a production capacity of 30,000 tons a year also normally from petroleum, but having also equipment for production in emergency from Lignite. The fourth at Decazeville will, it is understood have a capacity to produce 30,000 tons a year from coal.

NEW AIR BASE.—The reference to a new air base at Aspretto in Ajaccio–Corsica, which appeared on p. 224 of these NOTES in last quarter's JOURNAL, should, of course, have appeared under "France."

GERMANY

THE GERMAN AIR FORCE IN 1938.—The following message on the German Air Force in 1938 was published by Generaloberst Milch :—

"Never more clearly than 1938 was the truth of the old saying confirmed: "Si vis pacem, para bellum"; for it was only because of his strong armed forces that the

Leader was able to reach his goal without a blow and at the same time preserve peace for the World in the critical days of September. Of these armed forces it was the Air Force which contributed decisively towards letting considered reason gain the upper hand over irresponsible war-mongering abroad.

" The German Air Force was ready every hour. Whoever had the opportunity during that time of being in Service garrisons and stations, whoever saw the work of our airmen, signalmen and artillerymen, and, above all, whoever looked officers and men in the eyes, he was arrested by the rock-like certainty that here a Service had been forged which, if necessary, would stand at the disposal of its Leader and Highest Commander in unconditional and lightning readiness. In only three and a half years this Service was created. Unimaginably short the time, but unimaginably strong the will to victory and battle which filled all who helped in this great work of construction from the very first moment. That spirit was waked to life again which inspired the glorious German Air Forces of the Great World War and which, as it is written in the order creating the first group of the young German Air Force in the Spring of 1935, was guarded faithfully and unshakeably through struggle and want by the last commanding officer of the *Richthofen* group of fighter squadrons and the first Commander-in-Chief of the Air Force of the 3rd Reich—one Field Marshal Goering. ' I give you the best aircraft equipment in the World '—so said Hermann Goering to a gathering of young officers. The Field Marshal has kept his word. Research and production were brought to the highest pitch. In this technical and industrial success the creative brains of constructors and engineers have the same part as the tireless and restless labour of the German workman. And if German aircraft won no less than thirty-four international records in 1938, then that is an eloquent sign that German aeronautics, research and skill in shaping material have kept pace with that spiritual and mental rejuvenation which in its effects gave the German nation the protection of the air above its territory—the German Air Force."

RECORDS.—Flugkapitan Hans Dieterle in a Heinkel He-112U single-seat landplane (Daimler-Benz liquid-cooled engine speeded up to about 2,000 h.p.) set up a new world absolute speed record of 464 miles an hour over a regulation three kilometre course near Berlin on 30th March, 1939. Until it has been recognized by the F.A.I. the flight will not, of course, rank as an official record, but there is no reason to doubt that it will be accepted.

"A" Class long distance record is claimed by the German Press for the non-stop flight from Bengasi to Gaja (a distance of about 3,980 miles) carried out at the end of 1938 by an Arado 79 aircraft piloted by Oberleutenant Pulkowsky and Leutenant Jennet. The aircraft had a 106 h.p. Hirth engine, and the consumption claimed is 9 litres per 100 r.m. (about 30 miles a gallon).

The following three new height records by Germany have been announced :—

International Height Record for Gyroplanes.—10,991 ft. with the F.W. 61 Helicopter.

Height Record for Light Aeroplanes.—The small cabin aeroplane Si. 202 (Hummel) of the Siebel Flugzeugwerke Halle A.G. obtained a height record of 19,625.8 ft. Also the Chief Pilot of Siebel's, Flugckapitan Siefe, obtained a height record of 23,106.6 ft. on 4th February, 1939 in a single-seater aircraft of the same design. This is approximately 3,927 ft. more than the previous record.

ANTI-AIRCRAFT ARTILLERY ORGANIZATION.—A recent Press report describing the tasks of German A.A. Artillery stated that a Flak regiment consists of three brigades, two brigades with guns of mixed calibre and one brigade of searchlights.

RECRUIT DEPOTS.—In a Press report of a visit to the Recruit Depot at Schonewalde it was stated that German Air Force Officer cadets now receive their first six months disciplinary training in the recruit depots along with other recruits. They receive the same training, but as prospective officers they are expected to be outstanding during their training.

ITALY

ITALIAN AIR STRATEGY.—Marshal Balbo has published an article on Air Warfare which he has written for a new Italian Encyclopædia. The article once again asserts Italy's belief in the Douhet theory and speaks of "attacks in mass" and the "moral destruction" of the enemy, but describes the defeat of the enemy air force by attacking aircraft factories, depots, etc., as being one of the initial tasks of the Italian Air Force.

Marshal Balbo points out in his article, which contains no new ideas, that Italian air strategy has not been influenced by the Abyssinian war, the Spanish civil war or the China–Japanese war, and recognizes that an air force has not yet been employed in a primary role.

SPECIAL FLIGHTS.—It was officially stated in Italy that the following records were established on 4th December by Lieutenant-Colonel Tendi at an average speed of 291.36 m.p.h. over a distance of 1,243 miles :—

(*i*) with a useful load of 1,102 lb.
(*ii*) ,, ,, ,, 2,204 lb.
(*iii*) ,, ,, ,, 4,408 lb.

The first two records were previously held by France with a speed of 271 m.p.h., while the last record was already held by Italy.

The type of aircraft used was a Savoia 79 with three Piaggio P.XII engines fitted with a reduction gear and variable pitch propeller. This aircraft is one of the standard Italian Air Force bombers.

It is claimed that with the above-mentioned records Italy has now thirty-one international records to her credit.

CORRECTION.—In recording the completion of a new air base at Aspretto, in Ajaccio–Corsica in these NOTES in last quarter's JOURNAL (p. 224), the paragraph was inadvertently headed "Italy." It should, of course, have referred to France.

SWITZERLAND

BUDGET FOR THE MILITARY AIR SERVICE.—The 1939 budget for the military air service in which is included the Defence contre-Arienne, amounts to £702,491, an increase of £262,169 over 1938. In addition, £19,924 is devoted to passive air defence.

UNITED STATES

THE AIR ASPECT OF THE RE-ARMAMENT PROGRAMME, 1939.—When the first rumours of the President's proposals began to circulate in regard to the part which aviation should play in his projected re-armament programme, a figure of 10,000 additional aircraft for the Army was commonly mentioned and generally accepted as possible. This was probably because Germany's reported possession of 10,000 military aircraft had been given wide publicity, and it was considered that if a country like Germany could build up a force of 10,000 military aircraft, the United States could at least equal that figure. The nature of the problem involved in such

an expansion of the United States Army Air Corps in a relatively short time was not, however, so simple as it appeared to the general public. The production of this number of aircraft in the United States within a period of two years, or even less, was in fact the simplest part of the problem. It was quite another thing to train the crews and mechanics required to fly and maintain these aircraft. In addition, the types of aircraft used at present by the United States Air Corps are in general slightly inferior in performance to those in production by the European powers. While, therefore, it might have been possible to manufacture 10,000 aeroplanes and to train crews and mechanics for them, all within two years, the result might well have been an air force composed of obsolescent aircraft manned largely by comparatively untrained personnel ; in short, an air force with little fighting value.

When the President finally disclosed his proposals to Congress on 12th January, 1939, the air programme was found to be much less extensive than expected. For the Army, he proposed that $300,000,000 be appropriated for the expansion of the Air Corps. Of this sum, he suggested that $50,000,000 be authorised at once to enable aircraft production on a large scale to be resumed and so permit aircraft manufacturers to re-employ thousands of their skilled workmen, whom they have had to discharge in the last six months owing to lack of orders. Starting in the next fiscal year, beginning 1st July, 1939, the remaining expenditure of $250,000,000 for the Army Corps is recommended for approval, and although there is no mention of it in the President's message, it is probable that orders for aircraft to the value of about $170,000,000 will be placed by 1st July, 1940. For this sum it should be possible to purchase approximately 3,000 aircraft, thus raising the strength of the Army Air Corps to over 5,000 aircraft.

For the Navy, the President proposes that $65,000,000 be appropriated. Of this sum, a large proportion will be required for the acquisition and development of the air bases recommended by the Hepburn Board and only $21,000,000 for additional aircraft.

The President further recommends that 20,000 young men should receive primary flying instruction each year at Federal expense and under the auspices of the Civil Aeronautics Authority. It is emphasized that this training is " directed to the essential qualifications for civilian flying," but it is obvious that the pilots so created would have a potential military value and could be converted into efficient military pilots after only three to six months further military flying training at Army or Naval Schools. A sum of $10,000,000 is recommended for this project. This sum will, of course, not be available until after the beginning of the 1939/1940 fiscal year. In the meantime, however, the National Youth Administration is providing $100,000 for the training of 300 suitable college students before the end of June, 1939, and from the experience thus gained the details of the larger scheme will be worked out.

The effect on the aircraft industry in the country of the orders that will be placed during the next eighteen months, if the President's proposals are approved, will be to keep it working at full capacity for the next two and a half years. It has the physical capacity to build within that time all the aircraft required for the Army, Navy and civilian programmes without erecting many additional buildings. Certain of the smaller plants, such as the Bell Aircraft Corporation of Buffalo, who expect to receive large orders for bombers and pursuit aircraft under the expansion programme, will require additional space, and the engine manufacturers will also require to build additional shops and to increase their staffs, as the two main plants are already working to capacity on a one to one-and-a-half shift basis. At the same time, sight has not been lost of the desirability of retaining a firm foothold in the

foreign aircraft market, and this aspect of the rearmament programme will be carefully watched. As far as the present British orders are concerned, no delay at all should result. Indeed, the shipment of the 200 North American Harvards on order will in all probability be completed ahead of contract date.

Of the 3,000 aircraft which the Army propose to order, at least 1,600 will be combat aeroplanes, of which probably 1,000 will be bombers, 500 pursuit planes, and the remainder observation aircraft. This increase of combat aircraft will necessitate the formation of thirty-seven new squadrons and the addition of 2,200 officers and slightly more than 25,000 enlisted men (including 1,200 flying cadets) to the Army Air Corps. To accommodate this personnel many existing air bases are to be expanded and new bases established in New Hampshire, Florida, Puerto Rico, the Canal Zone and Alaska.

The additional aircraft recommended for the Navy will probably be of the patrol bomber type, but their provision will depend on the decisions taken by Congress on the recommendations of the Hepburn Board, which advises the acquisition and development of a number of new air bases in the Pacific and elsewhere, and the location at these places of new patrol bomber squadrons. (See Navy Notes p. 421).

To obtain pilots and mechanics in adequate numbers for the Army's air expansion programme and to train them thoroughly are both difficult problems for the General and Air Corps Staffs. It is proposed to expand existing technical schools and also to train recruits at all Air Corps air bases. The Army's flying training establishment at San Antonio is also to be increased. It seems doubtful, however, if these measures will be adequate, and the War Department have evinced great interest in the British system of obtaining and training both air and ground personnel.

Coincident with the air expansion proper of the Army, it is proposed to co-operate closely with the Civil Aeronautics Authority in carrying out the civilian air expansion measures proposed. With this in view, legislation will be introduced :—

(*i*) To authorise the use of Army training aircraft by civilian flying training schools and by colleges.

(*ii*) To permit of civilians being trained in Army Air Corps schools with a view to their subsequently becoming civilian flying or technical instructors.

(*iii*) To allow of an increase in the Air Corps personnel in civilian flying training and technical establishments.

REVIEWS OF BOOKS

GENERAL

Germany and a Lightning War. By Fritz Sternberg. Translated by Edward Fitzgerald. (Faber & Faber). 12s. 6d.

The author envisages the problem of war primarily from the economic angle. He starts by examining the world position to-day and reaches the conclusion that the Axis Powers, and in particular Germany, are in the grip of forces impelling them towards war. He then goes into the political alignment of the Powers and proceeds to examine the war potential of the various groups, devoting nearly a third of the book to the case of Germany. There follow two chapters on the economic re-organization carried out by the National Socialist régime, German foreign policy and plans. Finally, in a particularly interesting chapter, he gives us a well-documented account of German views on the subject of the maintenance of the home-front in a future war and the misgivings in some German military circles about the probable effects of National Socialist doctrine and methods when applied to an army at war.

The problems involved in a national war to-day obviously cover the whole field of human activity. It is not enough to " read and re-read the campaigns of the great commanders," it is essential that the soldier should have some grasp of the problems that governments have to face in organizing the industry and man-power of a nation for war. Above all, everything that goes to make up the elusive factor of morale is of primary importance. The author depicts the dilemma of National Socialist Germany where the methods employed to-day are, in his opinion, and in those of authorities he quotes, quite inapplicable to an army, or even the home-front, in war-time. In so far as the German Army is concerned this book throws a great deal of light on a problem which is fundamentally different from anything of which the British officer has personal experience. The conclusion is that Germany's only hope lies in a lightning war which depends for its success on the incapability or unwillingness of her opponents to defend themselves. This book, and in particular the last chapter, is well worth reading.

The Empire on Guard. By W. F. Wentworth-Shields. (Faber & Faber). 2s.

In order to take even a casual interest in affairs to-day, one must have some knowledge of the resources and organization of the Empire, and this Mr. Wentworth-Shields provides. Without going into much detail, his book outlines the structure of Imperial Defence and the measures which have been taken in Great Britain and the Dominions to safeguard the communications and territories of the Empire.

A brief survey of the geographical and political factors of Imperial Defence is followed by chapters on naval, military and air defence, and the economic organization of the Empire as a whole ; the tables of figures showing the distribution of the Defence Services form a reference which is seldom so readily available. The final chapter, " The Citizen and War," has a special reference to Air Raid Precautions.

Notes on French Ordnance, 1717 to 1936. By Captain James E. Hicks, assisted by Andre Jandot.

This is a book of 286 pages copiously illustrated by diagrams from handbooks and 80 pages of plates by Jandot. The first 141 pages are devoted to the development of muskets, rifles, pistols, swords, grenades and machine-guns, finishing with the 1924 machine rifle. To give an idea of the scope of the plates, there are 30 examples of pistols and about 45 of muskets and rifles; in addition to the actual weapons the author pays great attention to the "marks and stamping" on firearms and bayonets, arsenal proof marks, markings on cartridge cases and inscriptions on small-arms ammunition packages.

The next 141 pages deal with artillery, commencing with mortars 1732–92, and following the development of guns, carriages and ammunition from the muzzle loaders of the Gribeauval system (1776) up to modern times. Here again the author goes into great detail regarding the marking of ammunition, devoting a dozen pages to diagrams showing marks on shell, fuzes and cartridge cases.

A page follows giving a description of the Renault tank, followed by diagrams in plan and elevation; there are sketches of the St. Chamond and Schneider tanks and one which the author calls a "late model."

The book finishes with notes and sketches of steel helmets and bibliography. To the reviewer it appears somewhat lacking in balance, too much detail being given in some respects, too little in others. Nevertheless, it will be of great assistance to historians, to those who may have occasion to refer to French weapons and as a guide to the study of French handbooks.

NAVAL

The Private Papers of John, Earl of Sandwich, First Lord of the Admiralty, 1771-82. Edited by G. R. Barnes and J. H. Owen. Vol. IV, 1781-82. (Navy Records Society, Vol. 78, 1938).

This is one of the most interesting volumes of the *Sandwich Papers*, covering the momentous years of 1780 to 1782 with the surrender at Yorktown, the Siege of Gibraltar, and Rodney's battle with De Grasse. Holland in 1780 had come into the war on the side of France and Spain, and this volume deals with the maintenance of a fleet under Admiral Hyde Parker to oppose her in the North Sea. Admiral Geary had given up the command of the main fleet or Western Squadron, and as Vice-Admiral Barrington, the most eminent Flag Officer of the day, would not serve, Vice-Admiral George Darby took on the command. These papers show him as a man of courage and judgment who did his best in difficult circumstances. It was in July 1781 that a French and Spanish fleet of 47 ships appeared in the Soundings, and Darby with only 26 had to take up a waiting position at Torbay. In his fleet was John Phipps, Lord Mulgrave, Captain of the "Courageux," and a Lord Commissioner of the Admiralty, who wrote to Sandwich referring to his C.-in-C. as a 'plain but valuable man.' There is a good picture of him from the original in the National Maritime Museum.

There are letters, too, from Charles Middleton, the Comptroller, and Kempenfelt, giving Sandwich their view of the naval situation (pp. 61 and 80).

New and interesting light is thrown on Admiral Graves' battle of 5th September, 1781 with De Grasse off the Chesapeake by a letter from Graves never before printed. The history books are inclined to belittle Graves, but in this volume he appears as a man careful of his squadron and with plenty of ideas.

The latter part of the volume deals largely with the Inquiry into the Navy in 1782, and is interesting in showing the relations between Middleton, the Comptroller at the Navy Board, and the First Lord.

There is a good picture of Philip Stephens, Secretary of the Admiralty (1763–95).

The papers provide ample material for the revision of our judgment of Lord Sandwich who appears in a more favourable light than is usually accorded him ; in its careful arrangement and excellent introductions the volume reflects great credit on the wide knowledge and disinterested labour of the honorary editors.

Adventures Ashore and Afloat. By Admiral of the Fleet Sir Roger Keyes, Bart., G.C.B., K.C.V.O., C.M.G., D.S.O., LL.D., D.C.L., M.P., Hon. Colonel-Commandant Royal Marines. (George G. Harrap). 18s.

The previous memoirs of Sir Roger Keyes dealt with the period from 1910 to 1918—a period of war and definite preparation for a particular war. In this book, which ends soon after his promotion to Captain in 1905, he covers the earlier part of his career during the last quarter of a century in which our Navy never fired a shot in a sea battle. Such periods, like the quarter of a century since the War, may seem devoid of opportunity, and to those who serve through them any striving at efficiency may well appear purposeless. Anyone of the younger generation who is bemoaning his fate at being born into such a humdrum age cannot do better than read this book. He will realise that adventures are always there for the true adventurer. It is easy to say that the author was lucky to be on the spot ; but he made the position in which he happened to be on the spot, if he was not so already. He not only seized opportunities when he found them, but looked for them and, if necessary, made them.

Sir Roger Keyes' previous memoirs reviewed the naval conduct of a great war, and necessarily criticized what, in his view, were failures in that conduct. His present reminiscences are a quietly told and straightforward narrative of a far from quiet career. With no attempt at criticisms, preachings or strivings after effect, the warnings, lessons and excitements to be found in them become all the more effective. The high-lights of the latter were the Witu Expedition and the Boxer Rebellion with the relief of the Pekin legations, but most of them were found in a normal Service life afloat and ashore which, starting with masts and yards, reaches the day of destroyers. The fact that " Adventures " is the perfect word to be used for a title proves the author's zest for action. A feature of the book is the success of its unconscious self-portraiture. The author's personality stands out vividly on every page, with its keeness on doing, impatience of dallying, courageous independence of opinion even when a junior, and ready acceptance, or in fact avid seizure, of responsibility.

To anyone of the present generation who reads this book, and all should do so, two lessons must stand out. Firstly, the value and necessity of a true attacking spirit, in contrast to the merely defensive one which is still too prevalent in our strategical concepts and, more still, in our national and imperial outlook ; the spirit which gained our Empire and without which we can neither expect nor deserve to keep it. Secondly, their own opportunity of enjoying and using, as did the young Roger Keyes, " Those great teachers of youth, Responsibility and Work which is a Joy," which, as Mr. Winston Churchill says, in a fine foreword, " stood ever at his side."

Those whose active days are over, who may still wield the influence of experience, can read this book with equal interest and profit. It is exactly what a Service memoir should be; packed with interest and excitement and with hurt to none.

Captain Marryat and the Old Navy. By Christopher Lloyd. (Longmans, Green & Co.). 15s.

Besides being a short biography of the great naval novelist of the early part of the XIXth Century, Mr. Lloyd's book gives some vivid portraits of other naval characters of that time, especially of Lord Cochrane, under whom young Frederick Marryat served between 1806 and 1809. Indeed, the first hundred pages have more to say about that tempestuous peer than about his youthful follower.

Cochrane may have been a thorn in the side of the Government and of an Admiralty reeking with party politics, but he was a most gallant commander and a fine leader of men, and Marryat could not have had a more inspiring chief to teach him his duty as a naval officer. The adventures which filled these early years of his career culminated in the attack on the French fleet in Aix Roads.

Mr. Midshipman Marryat, aged seventeen, was second in command of an 'explosive brig' in this enterprise, and, according to his commanding officer—a Lieutenant of twenty-one—he "conducted himself very much to his own credit and my entire satisfaction."

But the heroism of Cochrane and his in-shore squadron was largely wasted through the supineness—to use a very kind term—of Admiral Gambier, who lay in the offing and refused to stand in and finish off the sorely harassed enemy. The ensuing court-martial on himself, for which Gambier was forced to apply, was a mockery of justice: the delinquent was acquitted, and Cochrane was not employed again for forty years.

The rest of Marryat's service was in the Mediterranean; on the North American Station during the American War; in an 'unserviceable and dangerous' ten-gun brig, in which he visited Napoleon's place of captivity—St. Helena, and was also employed in stopping smuggling; on the East Indies Station during the Burmese War; and finally in command of the twenty-eight gun ship "Ariadne," in which he was sent on "a six weeks' cruise to discover a rock in the Atlantic, which never existed except in the terrified or intoxicated noddle of some master of a merchant vessel."

He had already gained a reputation as a writer. In 1822 he produced a pamphlet suggesting the abolition of the system of impressment, and his *Frank Mildmay* added to the enormity of his offence in revealing matters which a corrupt Board of Admiralty wished to keep quiet. Eventually, he realized that his chances of employment as a Post-Captain were slender and that writing would be for him a lucrative occupation; so in 1830, when only thirty-eight years of age, he retired.

Mr. Lloyd shows how Marryat drew on his own experiences for many characters and scenes in such famous novels as *Peter Simple, Midshipman Easy, The Pirate and Three Cutters* and *Poor Jack*.

There is one curious mis-statement. The author says that in a crack frigate the rule was "up to the masthead in twelve minutes and all sail set in half an hour." Any old 'mast and yard' sailor would retort that such a ship must have been manned by cripples. Nevertheless, this is a very readable little work with a number of reproductions of Cruickshank's amusing sketches. While it will doubtless be greatly appreciated by the author's own pupils at the Royal Naval College, Dartmouth, it should also appeal to a much wider circle of his hero's admirers.

Queen Anne's Navy in the West Indies. By Ruth Bourne. (Yale University Press, New Haven). $3.00.

This book has grown out of a dissertation for a doctorate, and the worst that could be said for it is that it still smells too strongly of the lamp—a not uncommon fault with works of this kind. Miss Bourne will have no compromise with the general reader ; nothing is done to make one single episode exciting, not even the revolt of Benbow's officers ; and if the general reader seeks an historical background for events in the West Indies, he must seek it somewhere else. The authoress plunges straight into her subject, and with an even, unvaried stroke, swims through the turbulent waters to the bitter end.

At the same time, her book is unquestionably of great value to students of naval and imperial history, and it is particularly opportune as the complement to Commander Owen's *War at Sea Under Queen Anne*, which, while dealing in the greatest detail with events nearer home, was far from complete where the West Indies were concerned. Miss Bourne admirably supplies this deficiency, and no praise could be too high for the pains that she has taken to omit no single aspect of her subject, and to produce a well-balanced study. The lack of cruisers, the chaotic conduct of the convoys, the disastrous effects of random impressments from the merchant ships, the gross misconduct of many of the naval commanders, and the general discontent of the colonists are examined in great detail and, in general, with commendable accuracy.

It is true that neither *Queen Anne's Navy in the West Indies* nor *War at Sea Under Queen Anne* can be called exciting, but together they provide a body of material which the future historian of the Spanish Succession War will be unwise to neglect.

The First Commission of H.M.S. "Calliope." By Captain E. W. Swan O.B.E., V.D., D.L., R.N.V.R. (Privately Printed).

It is appropriate that the Commanding Officer of the Tyne Division of the R.N.V.R., whose headquarters are in the old "Calliope" should have commemorated the 50th Anniversary of that ship's famous escape from Apia Harbour by compiling and publishing this little book. Familiar though that epic adventure is, it is always inspiring to read it again, and the contemporary accounts which Captain Swan has collected are particularly interesting.

The list of officers who served in "Calliope" under Captain H. C. Kane includes the names of several Midshipmen and Naval Cadets who lived to reach Flag rank in a Navy which had long shed masts and yards ; the senior surviving officer is Captain M. G. Cartwright, R.N.—the junior Lieutenant. But, next to Kane, it is the names of Messrs. J. and G. Rennie—the engine builders, and of Bourke (Chief Engineer), Milton (Engineer), and Roffey (Assistant Engineer) which should be honoured for saving the British ship where three American and three German vessels were wrecked, for it was the stout construction, good condition and fine driving of the engines which enabled the Captain to perform a grand feat of seamanship.

Those who still walk her decks should be proud to belong to a man-of-war with such a tradition ; and the author of this memorial has, in his dual capacity, done a real service to the Navy in helping to keep that tradition alive.

The Ocean Tramp. By Frank C. Hendry, with Illustrations by Frank H. Mason, R.I. (Collins, London). 21s.

In *The Ocean Tramp*, author and artist have combined to produce a very delightful volume. The former gives a brief survey of the growth of the sailing ship and her supersession by the steamer; then he deals with tramp owners, vessels, personnel, life and work. At the outset of these latter chapters he reminds his readers that the term "tramp" denotes a ship which is not bound down to regular ports and schedules like the passenger or cargo "liner"; it by no means implies a sort of vagrant vessel akin to the human species.

Then follow five epic stories of courage and skill—typical of very many which could be told of the officers and men who man this truly silent service, the world over. The chapter on "Convoy" is a very human picture of conditions in the Great War which might easily recur. The whole is most readable.

Mr. Mason's many pictures and sketches are real treasures of maritime art and constitute a collection which alone is worth the price of the whole book.

Sea Flags. By Commander Hilary P. Mead, R.N. (Brown, Son and Ferguson, Glasgow). 3s. 6d.

This little volume by a well-known expert on flags deals with the history and use of flags worn or used for signalling at sea—mainly by the Merchant Navy.

It is full of useful information which should appeal not only to every seaman but also to people who live on land and take a patriotic interest in the traditions and ways of the great service by which the country lives. It fills a useful niche in the library of sea lore.

MILITARY

Behind the Lines. By Colonel W. N. Nicholson, C.M.G., D.S.O. (Jonathan Cape). 10s. 6d.

During the Great War Colonel Nicholson served on the administrative staff, first with the 51st (Highland) Divisional Headquarters, a Territorial Force formation, then with the 17th Divisional Headquarters, a New Army formation, then at a Corps Headquarters, and finally, after the Armistice, at General Headquarters. He is, therefore, well qualified to write on practical military administration in war, and generally on work and life "behind the lines."

It is by no means easy to write a book dealing with military administration that will have a general appeal, but in this the author has succeeded admirably. The book is, moreover, unique in that we do not recollect any other work that has covered just this particular field. Sound practical lessons there are in plenty—lessons that we would do well to ponder to-day—and there is a wealth of anecdote combined with a shrewd insight of the psychology of the British soldier, whether Regular, Territorial, or New Army, that keeps interest alive throughout.

The opening chapters are appropriately entitled "The Creaking Machine" and "Civilians into Soldiers." The machine in this case is the 51st (Highland) Division, uprooted (correctly) from their Scottish homes, and billeted in and around Bedford. There was apparently a great muddle, as was in those days no doubt inevitable. We should do better now, but there is still much we can learn from these chapters.

Incessant training was the order of the day—tactical training, that is, of the fighting troops—and little or no thought seems to have been spent on administration, or administrative training. " Yet the fact remains," says the author, " that no General can handle or manœuvre a division successfully unless all his administrative services have had experience in the field. It was a foretaste of the cleavage between the General and administrative staffs." And again, " All training and no comfort, like all work and no play, will never make a British soldier."

The author makes no bones about the cleavage during the War between the General and Administrative Staffs. His experience was that they did not work together as they should, and he complains that, " The General Staff never troubled to learn what the Administrative Staff did, never realised that unless they themselves had a practical knowledge of administration they could never be capable General Staff officers." And we might perhaps join him in doubting whether this truth is accepted even to-day; actively accepted, that is, in a practical sense, and not merely by passive acknowledgment. There will be many who will agree also that better results would be achieved if the General Staff were to comprise both the present " G " and " Q " branches. As to the latter, the author gives it as his opinion, with which again many will agree, that, " ' Q ' can only be learnt by war experience. Administrative staff appointments in peace are no training for war conditions." The fault here is, no doubt, that in peace the "Q" staff spend so much of their time administrating peace regulations and so little on exercises with troops, including administrative troops, that last sufficiently long for warlike administrative problems to arise. Costs are, of course, a prohibiting factor.

In a chapter entitled " Casualties " and elsewhere in the book there are descriptions and mention of the terrible conditions of the old battle grounds in France and Belgium—briefly, mud. And we are reminded that in such conditions " during a battle, till roads are re-made, pack transport is generally the surest means of supply." But our old friends the horse and mule have now practically disappeared from the Army, and it is to be supposed that their place is to be taken by tracked vehicles to traverse stretches of pulverised ground, for no road vehicle would look at it, and manhandling is both exhausting and wasteful.

After so long a period of continuous active duty with field formations, the author apparently did not take kindly to G.H.Q., to which he was posted towards the end of 1918. He was engaged on " Disposals " and found the place grim. " As an office, G.H.Q. was not really human. It was too big to be so. The human factor faded out of our work."

Altogether this is an interesting and most readable book, which is packed with those practical lessons learnt during the Great War, and now so easily forgotten. Every officer should read it, certainly every Staff Officer, but it will be enjoyed by the general public too.

Clive of Plassey. A Biography by A. Mervyn Davies. (Nicholas and Watson, Ltd.). 25s.

In the wrapper enclosing this book the publishers claim that the author " has been successful in discovering new documents." In his Preface, however, the author, more modest, states: " All biographers like to make a claim to ' new material,' I cannot make that claim, but I hope that I shall be considered to have made fuller use of ' old material ' than has previously been made."

This unpromising start should not deter the reader, who will find his interest sustained unflaggingly throughout the 500 pages of this excellent work. In his

Introduction, Mr. Mervyn Davies sets forth what he hopes to prove regarding the life and character of Clive and in his concluding pages he reviews the evidence ; in the intervening chapters he gives the testimony and evaluates each point for and against the man, the statesman and the soldier. The verdict, as might be expected, declares Robert Clive to be neither wholly good nor wholly bad.

Of Clive as a soldier it is claimed that swift decision and impetuous courage were his characteristics ; yet at Plassey—his most conspicuous victory—these virtues apparently deserted him although, paradoxically, his deserved reputation for them nerved his soldiers for the fight.

The " Officers' Mutiny " makes sad reading : rank mutiny it was and indefensible, but the regular officers must have been driven beyond all endurance when Clive, who as a " temporary " officer had feathered his own nest more than comfortably, as a civilian, came not only to forbid them following his own example but also to reduce their pay.

The author pays due tribute to the work of the Royal Navy under Admiral Watson and recalls happily the contemporary services rendered elsewhere by Admiral Saunders. Every boy has rightly learnt of Wolfe of Quebec and Clive of India, but what man-in-the-street knows, or cares aught, of Saunders of the St. Lawrence or Watson of the Hugli ? Mr. Mervyn Davies has done his generous best to right this wrong.

There is an exhaustive list of " Notes and References " which, for uncertain tempered readers would be more conveniently placed above instead of hidden below the extension map of India. Of the few footnotes some appear to be kindly criticism by a reader and to have escaped erasure from the proofs : that on p. 429 is a case in point. The statement that the rate of fire of the field-gun of 1746 was 10 to 15 rounds a minute might well have been thus challenged.

The book should be read with interest by many. The index is unworthy of the text and suggests lack of liaison between the compiler and the author.

English Captain. By Tom Wintringham. (Faber & Faber). 13s.

Captain Wintringham found himself in Spain as a journalist, and he offered his services to the Government side. His previous military experience consisted of three years in France in the late war.

His story of the formation and training of the " British battalion " at Albacete is of exceptional interest. One has always wondered what the role of a Political Commissar really was. It is clear from the narrative that in the early career of a unit, constituted as this one was, he is an indispensable aid to the harassed commanding officer. The fact that the International Brigades were composed of foreigners jealously guarding their national idiosyncracies in a strange land—the differences between British, Americans, Germans, French and others are amusingly brought out —and without local political affiliations probably supplies the reason why, contrary to historical experience, relations between " politicals " and soldiers remained harmonious. The experience of Spanish formations was probably less happy in this respect.

The author commanded the battalion he had helped to train at the battle of Jarama Ridge, and had no cause to be anything but proud of them. His detailed description of the action of his unit, with sketch maps, is an interesting study in minor tactics. A couple of wounds put an end to his active soldiering, and he was posted as an instructor to the tactical school where the officers and N.C.O.'s of the International Brigade were trained. One may agree or disagree with his politics, but his remarks on the lessons of the fighting are worthy of consideration.

There are numerous photographs and a map.

A Short Outline of Modern Tactics. By Brigadier-General A. B. Beauman. (Morrison and Gibb, Ltd.). 3s. 6d.

This little book is not intended to be in any way an exhaustive treatise, but merely to outline the manner in which the latest developments in armaments and doctrine are likely to influence future warfare.

The author is an officer of wide experience in the command and training of troops, both in peace and in war, so his conclusions deserve to carry considerable weight.

He emphasizes the value to attacking troops of persistent support from low-flying aircraft and points out that, so far, the British Army has made very little progress in studying this form of co-operation between land and air forces.

History of the Great War: Order of Battle of Divisions: Part 3a, New Army Divisions (9-26). Compiled by Major A. F. Becke. (H.M. Stationery Office). 12s.

The present Part of this publication includes the Orders of Battle of eighteen New Army Divisions (9th–26th), all of which were wartime formations. These Divisions fought on the Western Front in France and Belgium, as well as in Italy, in Gallipoli, in Macedonia, and in Egypt and Palestine; and they included the only British Division, which served and fought in Mesopotamia.

Considering the general unpreparedness of the country for participation in a European conflict, the fact that all but one of these Divisions were able to leave England within fourteen months of the declaration of war emphasizes the British genius for successful improvization. But we cannot count on anything like that time to make good our deficiencies in the event of another conflict.

Die Rumanienkrieg, 1916. By Generalleutnant Ernst Kabisch. (Berlin, Otto Schlegel). R.M. 4.50.

This is a compact account in 200 pages of the Rumanian Campaign of 1916 with orders of battle, 18 sketch maps and 14 photographs, by a well-known author, who ended the War as a divisional commander. It is shown that General von Falkenhayn had in June and July made every preparation for Rumania declaring war on Austria and that when she did so at the end of August, he had only to say the word "go." Rumania's action was made the excuse for his dismissal from the post of Chief of the General Staff, lack of success at Verdun and the Somme being the true reason.

General Kabisch gives Falkenhayn the credit for planning the invasion of Rumania from the North by the Ninth Army which he commanded; but thinks that the time has not yet come for a considered judgment on him as a commander. He has, however, collected from Falkenhayn's former staff officers and others their opinions of him, which will prove valuable material for a later biographer. Kabisch himself was Chief of the Staff of the III Reserve Corps (General von Beseler) at Ypres in 1914, and is able to say that before the attack of the 11th November, Falkenhayn consulted the Generals on the spot as to whether it had a good chance of success, and that the corps commanders were unanimously in favour of the attack taking place.

REGIMENTAL HISTORIES

The History of The Cheshire Regiment in the Great War, 1914-1918. By Arthur Crookenden, Colonel of the Regiment. (W. H. Evans, Sons, Ltd.).

This volume chronicles the exploits of the Regular, Territorial and Service battalions of the Cheshire Regiment during the World War and describes in detail the experiences of the several units in the various theatres. Cheshire may well be proud of her sons, for from her relatively narrow boundaries no less than thirty-eight battalions were raised, fifteen of which served overseas in action against the enemy.

Nine battalions of the Regiment took part in the Battles of the Somme, July-November, 1916, enduring and inflicting heavy punishment. The recent publication of *Military Operations, France and Belgium, 1916, Vol. II*, gives point to and confirms current criticisms that the tactical methods laid down for the infantry proved faulty and the very bravery of the troops caused unnecessary casualties. Be this as it may, there is no shadow of doubt that the Germans suffered even more severely than ourselves. Some post-War " historians " have claimed that our losses on the Somme were far higher than those of the enemy ; Mr. Lloyd George, in particular, has alleged that for every German killed in action, two of our men paid the supreme penalty. These assertions are ill-founded. An analysis of casualties, composed in the light of the ample information now available from both sides, reveals that, in round figures, the French lost 204,000, the British 419,000 and the Germans 680,000 casualties in this battle. These new facts should, at last, dispel a myth that has been a long time a-dying and should go far to reassure the survivors of the British Fourth and Reserve Armies that the sacrifices of their comrades were not made in vain.

The battle of Messines, in June, 1917, where the 9th, 10th, 11th and 13th Service Battalions played a prominent part, testifies to the quality of the troops raised " for the duration." To quote from the Commander-in-Chief's despatch : " The position assaulted was one of very great natural strength on the defence of which the enemy had laboured for nearly three years." Yet our soldiers captured the position in under two hours.

The story is illumined by excellent maps, many of which open clear of the text and is supported by a detailed index.

History of the 43rd and 52nd (Oxfordshire and Buckinghamshire) Light Infantry in the Great War, 1914-1919. Volume I : The 43rd Light Infantry in Mesopotamia and North Russia. By Captain J. E. H. Neville, M.C. (Gale and Polden, Ltd.). 25s.

This volume gives the story of the 43rd (1st Battalion The Oxfordshire and Buckinghamshire Light Infantry) in Mesopotamia and North Russia during the War, 1914–1919. The 43rd Light Infantry were stationed at Ahmednagar in 1914 and formed part of the 17th Infantry Brigade (Brigadier-General W. H. Dobbie), which sailed for Mesopotamia in November, 1914.

During the battle of Ctesiphon in November, 1915, the battalion was called upon to perform one of the most difficult manœuvres known to warfare, i.e., a movement to a flank in front of an entrenched enemy at a distance of not more than 1,000 yards. This operation was brilliantly executed by the 43rd, who then attacked and captured the " Water Redoubt," the key to the Turkish left centre.

The magnificent defence of the Fort at Kut el Amara in December, 1915, by the Regiment was eulogized throughout the garrison. To quote General Townsend: " The repulse of the Turkish assault proved afresh the valour of the troops composing

the Sixth Division, and especially did the men of the Oxford Light Infantry add more glory to the history of that famous regiment, so renowned in the Peninsular War."

History of the 1st Battalion 6th Rajputana Rifles (Wellesley's). By Lieut.-Colonel F. H. James, O.B.E., M.C. (Gale and Polden, Ltd.). £1 (Cloth), £2 5s. (Leather).

The regiment, formerly the 104th Wellesley's Rifles, owes its title to its distinguished service in the Mysore War in 1800 under Colonel Wellesley, later known as the Duke of Wellington.

In October, 1914, the regiment formed part of the 16th Infantry Brigade under the command of Brigadier-General W. S. Delamain, which landed in the Shatt al Arab, near Abadan. Advancing up the River Tigris, the battalion took part in the capture of Qurna and in the hard-fought actions of Kut el Amara and Ctesiphon. Forced back later by overwhelming numbers, the regiment withdrew to Kut and was captured, with the rest of the 6th (Poona) Division, after an heroic defence lasting one hundred and forty-three days.

A year later, the battalion was re-formed, and again saw service in Mesopotamia and on the North-West Frontier, where it has fully sustained its former reputation and traditions.

AIR

Views on Air Defence. By Lieutenant-General N. N. Golovine, in collaboration with a Technical Expert. (Gale and Polden). 5s.

This book is a reprint of three articles which appeared during 1937 and 1938 in the *Royal Air Force Quarterly*. Into the hundred pages which it contains the authors have condensed an enormous amount of material. Quoting freely from other authorities, British and Foreign, their survey touches on aircraft design and armament, improvements to bombs, bombing tactics, air strategy, balloon barrages, anti-aircraft guns and searchlights, meteorological conditions and a host of other subjects, concluding with a complete scheme for the air defence of Great Britain.

The authors, as they frankly admit, have not had the advantage of access to the information which all nations keep secret but on which all air defence schemes must ultimately be based. Their conclusions, therefore, must be accepted with reserve. Nevertheless, as a theoretical study of the subject their book is welcome.

Of special interest are the sections dealing with the merits of single-seater, single-engined interceptor fighters as compared with two or three-seater, twin engined 'destroyers,' of movable *versus* fixed armament and of bullet firing as against shell firing weapons. But some of the proposals advanced, not necessarily by the authors themselves, are not likely to find universal acceptance, and in this category can be placed the searchlight carrying aeroplane. Others have a somewhat defeatist basis; the rocket-propelled bomb, for instance, which can be released ten miles short of the objective and which will thus enable the bomber to avoid anti-aircraft fire, will, if it ever comes into being, convince the anti-aircraft gunner, if, indeed, he needs convincing, that he has fully justified his existence.

With many of the authors' contentions, however, no one will quarrel. Among these are the necessity for a long term and properly co-ordinated programme of aircraft construction and the closest possible collaboration between the engineer and the user in aircraft design.

ADDITIONS TO THE LIBRARY

Unless otherwise stated, the date of publication is within the last twelve months.

GENERAL

NORTH CHINA FRONT. By J. Bertram. 8vo. (Macmillan & Co., Ltd.). 15s.

ECONOMIC ASPECTS OF DEFENCE. By H. Macmillan. 8vo. (Macmillan & Co.). 1s.

WELLINGTON IN CIVIL LIFE. By Muriel Wellesley. 8vo. (Constable). 18s.

PROPAGANDA TECHNIQUE IN THE WORLD WAR. By H. D. Lasswell. 8vo. (Kegan Paul). 10s. 6d.

HERMANN GOERING. By E. Gritzbach. 8vo. (Hurst & Blackett). 8s. 6d.

LES LEÇONS DE LA GUERRE D'ESPAGNE. By General Duval. 8vo. (Librairie Plon).

A GUIDE TO THE IRISH VOLUNTEER, YEOMANRY AND MILITIA RELICS (18TH AND 19TH CENTURIES). Pamphlet. (Catalogue of the City of Belfast Museum and Art Gallery). Given by P. D. Clendenin, Esq.

INDIA'S NORTH-WEST FRONTIER. By Sir W. Barton. 8vo. (John Murray). 10s. 6d.

THE VOYAGE OF NICHOLAS DOWNTON TO THE EAST INDIES, 1614–15. As recorded in contemporary narratives and letters. Edited by Sir William Foster. 8vo. (The Hakluyt Society). 2nd Series. Vol. No. LXXXII.

MEDITERRANEAN CRISIS. By H. J. Greenwall. 8vo. (Nicholson & Watson). 5s.

THE BRITISH COMMONWEALTH AND THE FUTURE. Edited by H. V. Hodson. 8vo. (Oxford University Press). 8s. 6d.

ECONOMIC PROBLEMS OF THE NEXT WAR. By Paul Einzig. 8vo. (Macmillan & Co.). 7s. 6d.

THE SPANISH ARENA. By W. Foss and C. Gerahty. 8vo. (The Right Book Club). 2s. 6d.

FLAGS OF THE WORLD. (Revised Edition). By V. Wheeler-Holohan. 8vo. (Warne). 10s. 6d. Presented.

THE NEXT BRITISH EMPIRE. By R. A. Piddington. 8vo. (John Murray). 6s.

THE VOYAGE OF PEDRO ALVARES CABRAL TO BRAZIL AND INDIA. Edited by W. B. Greenlee. 8vo. (The Hakluyt Society. 2nd Series. Vol. LXXXI).

EUROPE IN THE 19TH AND 20TH CENTURIES. 5th Edition. By A. J. Grant and H. W. V. Temperley. 8vo. (Longmans, Green & Co.). 15s.

WILLIAM PITT, EARL OF CHATHAM. By Brian Tunstall. 8vo. (Hodder & Stoughton). 20s.

CONSULTATION AND CO-OPERATION IN THE BRITISH COMMONWEALTH. Compiled by G. E. H. Palmer. 8vo. (Oxford University Press). 12s. 6d.

INDIA OF THE PRINCES. By Rosita Forbes. 8vo. (Right Book Club). 2s. 6d.

CLIVE OF PLASSEY. By A. Mervyn Davies. 8vo. (Nicholson & Watson, Ltd.) 25s. Presented.

ADMINISTRATIVE ASPECT OF OPERATIONS, STAFF DUTIES AND TRAINING. By Lieut.-Colonel J. G. Elliott. 8vo. (Sifton Praed & Co., Ltd.). 4s. Presented.

HARRAP'S STANDARD FRENCH AND ENGLISH DICTIONARY. Edited by J. E. Mansion. 4to. Part I, 42s. Part II, 63s.

IMPERIAL DEFENCE. By Major-General H. Rowan-Robinson. 8vo. (Frederick Muller, Ltd.). 10s. 6d.

NAVAL

AYE, AYE, SIR—THE AUTOBIOGRAPHY OF A STOKER. By "Clinker Knocker." 8vo. (Rich & Cowan). 15s.

CAPTAIN MARRYAT AND THE OLD NAVY. By C. Lloyd. 8vo. (Longmans, Green & Co.). 15s. Presented.

QUEEN ANNE'S NAVY IN THE WEST INDIES. By Ruth Bourne. 8vo. (U.S.A.) $3.00. Presented.

MILITARY

THE TRAGEDY OF MESOPOTAMIA. By Sir George Buchanan. 8vo. (Blackwood). 12s. 6d.

OTHER RANKS OF KUT. By Flight-Sergeant P. W. Long. 8vo. (Williams & Norgate). 10s. 6d.

DAS PANZER-ABWEHRBUCH. By Major von Tippelskirch and Hauptmann Ritter E. von Peter. 8vo. ("Offene worte," Berlin). 4s. 6d.

HISTORY OF THE GREAT WAR—ORDER OF BATTLE OF DIVISIONS PART 3A NEW ARMY DIVISIONS (9–26). Compiled by Major A. F. Becke. 8vo. (H.M.S.O.) 12s. Presented.

BEDFORD FORREST. By A. N. Lytle. 8vo. (Eyre & Spottiswoode). 18s. Presented.

LES FORCES MORALES. By Capitaine Reguert. 8vo. (Charles Lavauzelle & Cie., Paris).

L'ARMÉE MODERNE. By General Maurin. 8vo. (Flammarion, Paris). Frs. 20. Presented by the author.

BEHIND THE LINES. By Colonel W. N. Nicholson. 8vo. (Jonathan Cape) 10s. 6d. Presented.

A SHORT OUTLINE OF MODERN TACTICS. By Brig.-General A. B. Beauman. 8vo. (Hugh Rees, Ltd.). 3s. 6d. Presented.

ENGLISH CAPTAIN. By T. Wintringham. 8vo. (Faber & Faber). 12s. 6d. Presented.

PANORAMA OF THE FUNERAL PROCESSION OF THE DUKE OF WELLINGTON. Presented by M. B. Taylor, Esq.

NOTES ON FRENCH ORDNANCE, 1717 to 1936. By J. E. Hicks. 8vo. (U.S.A.). Presented.

REGIMENTAL HISTORIES

REGIMENTAL RECORDS FROM 1886 TO 1912 OF THE 25TH CAVALRY (FRONTIER FORCE). 8vo. (Gular Singh & Sons, Calcutta, 1912). Presented by LIEUT.-COLONEL H. J. E. Palmer.

HISTORY OF THE 1ST BATTALION 6TH RAJPUTANA RIFLES (WELLESLEY'S). By Lieut.-Colonel F. H. James. Cr. 8vo. (Gale & Polden, Ltd.). Presented by the Regiment.

HISTORY OF THE 2ND DIVISIONAL SIGNALS—Pamphlet. Presented by Major G. W. Odell.

A SHORT HISTORY OF THE SIXTH BATTALION DURHAM LIGHT INFANTRY. By Captain W. I. Watson. 8vo. (The Teesdale Mercury Press, Barnard Castle). Presented by the author.

AIR

THE ROYAL AIR FORCE. By F. V. Monk and H. T. Winter. 8vo. (Blackie & Son) 3s. 6d.

VIEWS ON AIR DEFENCE. By Lieut.-General N. N. Golovine. 8vo. (Gale & Polden). 5s. Presented.

ROYAL UNITED SERVICE INSTITUTION

Hundred-and-Eighth Anniversary Meeting

ON TUESDAY, 7TH MARCH, 1939, AT 3.30 P.M.

AIR VICE-MARSHAL SIR PHILIP GAME, G.C.V.O., K.C.B., K.C.M.G., D.S.O. (Chairman of the Council), in the Chair.

THE SECRETARY, Captain E. Altham, C.B., R.N., read the notice convening the Meeting, which had been published in *The Times* of Wednesday, 22nd February, 1939.

ANNUAL REPORT FOR 1938

The Council have the honour to present their Annual Report for 1938.

COUNCIL.

VICE-PRESIDENTS.

Field Marshal Sir Claud W. Jacob, G.C.B., G.C.S.I., K.C.M.G., and Brigadier-General The Earl of Lucan, P.C., G.C.V.O., K.B.E., C.B., T.D., have been re-elected Vice-Presidents for a further period of office.

ELECTED MEMBERS.

Vice-Admiral Sir Geoffrey Blake, K.C.B., D.S.O., was elected a Naval member of the Council to fill the vacancy caused by the resignation of Rear-Admiral W. N. Custance on taking up an appointment abroad.

The following Members, having completed three years' service, retire :—

ROYAL NAVY.

Rear-Admiral B. C. Watson, C.B., D.S.O.

REGULAR ARMY.

*Major-General J. R. M. Minshull-Ford, C.B., D.S.O., M.C.
*Brigadier R. P. Pakenham-Walsh, M.C.

TERRITORIAL ARMY.

*Colonel J. Josselyn, C.M.G., D.S.O., O.B.E., T.D.

ROYAL AIR FORCE.

Air Chief Marshal Sir Hugh Dowding, G.C.V.O., K.C.B., C.M.G.

Of the above, those marked * offer themselves for re-election, for which they are eligible. This leaves one Naval vacancy and one Royal Air Force vacancy.

Admiral of the Fleet Sir Frederick Field, G.C.B., K.C.M.G., has been nominated to fill the naval vacancy, and Marshal of the Royal Air Force Sir Edward Ellington, G.C.B., C.M.G., C.B.E., to fill the Royal Air Force vacancy.

REPRESENTATIVE MEMBERS.

Major-General L. Carr, D.S.O., O.B.E., has been appointed War Office Representative in succession to Major-General E. K. Squires, C.B., D.S.O., M.C.

EX-OFFICIO MEMBERS.

Admiral Sir Roger R. C. Backhouse, G.C.B., G.C.V.O., C.M.G., has succeeded Admiral of the Fleet Lord Chatfield, G.C.B., O.M., K.C.M.G., C.V.O., D.C.L., on taking up the appointment of First Sea Lord.

Vice-Admiral C. E. Kennedy-Purvis, C.B., has succeeded Vice-Admiral Sir S. R. Bailey, K.B.E., C.B., D.S.O., on taking up the appointment of President of the Royal Naval College, Greenwich.

Vice-Admiral T. H. Binney, C.B., D.S.O., has succeeded Air Marshal Sir Arthur M. Longmore, K.C.B., D.S.O., on taking up the appointment of Commandant of the Imperial Defence College.

MEMBERSHIP.

The total number of Members on the roll at the end of 1938 was 6,081 as compared with 6,004 in 1937, the highest number ever recorded up to that time. During the past year 305 Members joined the Institution as compared with 346 in 1937. There were 116 withdrawals, as compared with 87 in 1937; 39 Life Members and 47 Annual Members died; 26 Members were struck off for being two years in arrear with their subscriptions.

The details of Members joining are as follows:—

Regular Army	182
Royal Navy	39
Indian Army	28
Territorial Army	26
Royal Air Force	20
Dominion and Colonial Forces	4
Royal Marines	3
Royal Naval Reserve	1
Indian State Forces	1
Indian Police	1
	305

This gives a net increase of 77. As the loss of Life Members does not affect the financial aspect, the financial gain on the year is 116 as compared with 174 in 1937.

GENERAL.

Exemption from General Rates.

It will be recalled that mention was made in the Annual Report for 1937 of the efforts which had been made to secure exemption from the payment of General Rates under the Act of 1843. At that time an Appeal by the Westminster City Council against the judgment given in the Institution's favour at the County of London Session was pending in the Divisional Court of the King's Bench Division.

This Appeal was heard on 29th April, 1938; it failed, and the verdict in favour of the Institution was upheld. The Lord Chief Justice and the two learned Judges who sat with him, were unanimous in agreeing that the Institution had duly established its claim to be a Society "instituted for purposes of science and literature . . . exclusively" within the meaning of the Act, and that its premises are used solely for those purposes. The taxed costs of the Appeal were also awarded in our favour.

The Westminster City Council have accepted this verdict with the result that the Institution no longer has to pay General Rates. The net saving is estimated at approximately £400 per annum.

Offer of Use of Lecture Theatre to Service Departments.

It came to the knowledge of the Council that the crisis in international affairs in September-October last caused many officers on the Retired and Reserve Lists of the Services to feel the need of some form of instruction which would bring them up to date and fit them for the duties which they might be called upon to perform in the event of War.

With a view to assisting the Service Departments to arrange instruction for officers living in or near London, the Council have offered the use of the Lecture Theatre at such times as it is not required for the Institution's own meetings. They hope that this may meet the difficulty of providing a suitable hall in a central locality without undue expense.

FINANCE.

The surplus of income over expenditure for 1938 amounts to £283 8s. 1d. as compared with a surplus of £657 2s. 8d. in 1937.

Receipts.—The following is a comparison of receipts under the principal headings:—

	1938			1937		
	£	s.	d.	£	s.	d.
Annual Subscriptions	5,847	11	6	5,725	2	6
Life Subscriptions	155	10	0	139	0	0
Museum Takings	1,445	19	0	1,561	15	6
Journal Sales	940	0	1	886	4	2
Journal Advertisements	377	12	10	321	17	4

The continued increase in Annual and Life Subscriptions is satisfactory as being an indication of the steady increase of membership.

The Museum had a poor year by comparison with the two previous years. This must be attributed largely to the international situation during 1938

which, it is understood, has had a marked effect on most similar places, and to the closing of the whole building in connection with the crisis in the autumn. A payment of £74 was received from H.M. Office of Works as compensation for the Institution building having been taken over by the War Office for a period of eleven working days; this can be regarded as a partial offset to the loss of Museum Takings during that period.

The Journal sales are easily a record in the whole history of the Institution's publication, surpassing the previous record of last year by over £55. The takings for advertisements (net receipts after deducting commissions) also show a steady and satisfactory increase, for which Mr. H. Clayton—the Advertising Manager—is mainly responsible.

EXPENDITURE.—It will be noticed that expenditure in the past year has been considerably greater than in 1937.

When the Council were assured that they would have adequate funds, they felt the first call on the Institution's finances should be to improve the remuneration of the staff and employees, which had not been reviewed or adjusted for ten years. A Special Committee was appointed to examine existing salaries, wages and duties, and to make proposals for any adjustments. These proposals were duly laid before and approved by the Finance Committee and subsequently by the Council. It will be seen that they have involved a total increase of £328 6s. 9d.

Expenditure amounting to £530 5s. 4d. was incurred in connection with reseating of the Lecture Theatre and the redecoration of the Theatre and approximately half the interior of the rest of the Institution building. An appreciable proportion of this was met by the balance of the Coronation Account, which had previously been held against contingencies which might arise in connection with the Institution's claim for exemption from Rates. A further offset was obtained by the sale of the old mahogany benches to the Admiralty.

An item which must be regarded as more or less permanent is the increase in the cost of printing the Journal. This is due to higher charges made by the printers in common with that trade as a whole, and the extra copies necessitated by the increased number of Members.

Expenditure is carefully scrutinized by the Finance Committee at their monthly meetings and the Council are satisfied that the increases shown in the Revenue Account for the past year are fully justified by the improved income and are in every case in the best interests of the Institution.

LIFE SUBSCRIPTION FUND.—A sum of £200 has been withdrawn from the Life Subscription Deposit Account and invested in 2½ per cent. Conversion Stock 1944–49.

JOURNAL.

The increase in membership, another record in sales, and further improvement in the revenue from advertising are all evidence of the popularity of the Journal. The Institution's publication started in 1857. The earliest record of any sales is contained in the Finance Report of the 31st December, 1859, when they amounted to £25 1s. 0d. Just fifty years ago, in 1888, they were £375 7s. 11d., and fourteen years ago they were still only £472 17s. 0d. Since

then the increase in sales and circulation has been remarkable, and this year, as already mentioned, the former amount to £940 os. 1d.

The pages of the Journal continue to provide for a very wide variety of tastes in connection with Service matters. International affairs are an important feature, and the articles and special section devoted to them enable Members who have not the time or inclination to make a day-to-day study of events to keep themselves informed of the principal changes going on in the world.

National security is now a matter which intimately concerns the whole nation and has to take into account new forms of warfare and new means of defence. These have been dealt with in such contributions as "The Balloon Barrage" by Air Commodore J. G. Hearson, C.B., C.B.E., D.S.O.; "The Legality of Aerial Bombardment," by Mr. Philip Landon, M.C., M.A.; and "The Self Defence of Merchant Ships in War," by Commander J. Creswell, R.N. Changes affecting the personnel of the Services formed the subject of lectures and articles on "Army Recruiting," by Major-General M. G. H. Barker, C.B., D.S.O.; "The Development of the Territorial Army," by Lieut.-General W. D. S. Brownrigg, C.B., D.S.O., and "The Training of an Air Force Pilot," by Air Marshal L. A. Pattinson, D.S.O., M.C., D.F.C. Material developments were treated in a Discussion on "Speed and Gun Power in Warships" initiated by Captain E. Altham, C.B., R.N., and by articles on "Motor Torpedo Craft" by Lieutenant J. van de Kasteele, R.N.; "Modern War and its Maze of Machines" by Brigadier B. T. Wilson, D.S.O.; "Mechanization in New Zealand" by Major G. H. Clifton; "The Military Engineer in Modern Warfare" (lecture), by Major-General L. V. Bond, C.B.; and "The Development of the Float Seaplane," by Mr. H. J. C. Harper. Contributions of scientific interest were those on "The Chemist's Role in National Defence" by Lieut.-Colonel Haig Shekerjian; "Photographic Operations of the Royal Canadian Air Force," by Squadron Leader C. R. Slemon, R.C.A.F.; and "Stratosphere Research Flying," by Squadron Leader F. R. D. Swain, R.A.F.

In spite of the pressure on space due to the claims of subjects of contemporary interest and importance, the historical associations and traditions of the Services are not forgotten. These were represented by such articles as "The Mechanization of the Navy," by Admiral Sir Reginald H. S. Bacon, K.C.B., K.C.V.O., D.S.O.; "Regiments of the Glorious Revolution," by Major T. J. Edwards, M.B.E., and "The Birth of the Royal Air Force," by Mr. H. A. Jones, M.C.

The Correspondence Section continues to be popular as a medium for members to criticise or supplement the views expressed in lectures and articles, or to make brief contributions on matters of special interest to the Services. The Service Notes contain all official pronouncements of importance to the Services, and form an invaluable record of appointments, and changes of material and in conditions of employment. The Institution is fortunate in being able to secure expert criticism of all the more important works of interest to Members as they are published, and the Reviews section of the Journal aims at providing a really useful guide as to what new works contain and to what extent they are worth reading and can be relied upon.

To the Naval, General and Air Staffs, the Imperial Defence College, and the three Service Colleges, the Institution is indebted for much help in securing good lectures and articles of a high standard. The Historical Section of the Com-

mittee of Imperial Defence is always an invaluable authority on matters relating to the Great War, advice on which is always readily forthcoming.

The thanks of the Council are tendered to the many contributors of lectures, articles and letters published in the 1938 volume.

LIBRARY.

During 1938 5,932 books were issued on loan to Members, as compared with 4,833 in 1937. This is the largest number of books sent out from the Library in one year since the Institution was founded.

Two hundred and thirteen new volumes were acquired during the year; but in order to meet the increasing demands, additional copies of a great many of these books, to the number of 141 had to be purchased.

With a view to enabling Members to be supplied with the latest information on international affairs, defence problems, and Service developments, selected articles published in quarterly and monthly journals and magazines are now bound up in pamphlet form and indexed under the appropriate headings. These pamphlets supplement the latest books on the above subjects, and can be lent to Members on application.

The Library has other sources of up-to-date information which may be of assistance, especially to Members who are studying for Promotion Examinations or preparing for the Staff Colleges.

A list of books required by Members can now be registered, and they will be advised as soon as each book is available. Alternatively, a registration card can be supplied on request to enable Members to compile their own lists.

THE MUSEUM.

The number of visitors who passed the turnstile during 1938 was 39,202 as compared with 43,189 in 1937. These figures include members of H.M. Services and Police in uniform, Scouts, Guides and parties from elementary schools, etc., all of whom are admitted free; also friends of Members admitted by ticket but not those admitted by Members personally through the Institution entrance. The latter numbered 797 in 1938 as compared with 1,243 in 1937.

The following is a comparison of "free admittance" figures:—

	1938	*1937*
R.U.S.I. Members' Tickets	220	189
Fighting Services and Police	2,171	2,330
Scouts and Guides	324	301
Schools	1,023	797

The number of visitors who paid for admission during 1938 was 25,666 as compared with 39,572 in 1937.

Special Exhibitions.

Two Special Exhibitions were arranged in the Crypt during 1938. That showing during the first half of the year depicted "The Development of Imperial Air Communications." It included scale and sectional models of the latest British air liners, kindly lent by the Air Ministry in conjunction with the

Department of Overseas Trade, Imperial Airways, and Vickers (Aviation), Ltd.; and a model of the Short-Mayo combination, also lent by that firm. Imperial Air Routes were shown on a large-scale map, and a collection of photographs, lent by Imperial Airways, illustrated the principal air ports of the Empire.

During the same period a small section was arranged to illustrate various forms of Air Raid Precautions, including the official types of gas masks.

During the Summer holidays and latter part of the year, a second Special Exhibition was on view; this depicted "The Mechanization and Modernization of the Navy." It included models of ships; and models, pictures, and diagrams illustrating the development of gun mountings, torpedoes and torpedo tubes, and propelling machinery. Additions to the Institution's own collection were obtained through the kind co-operation of the Admiralty, the Commanding Officer, H.M.S. "Vernon," the National Maritime Museum, the Science Museum, Messrs. John I. Thornycroft & Co., Ltd., "The Illustrated London News," Messrs. G. Newnes, Ltd., and Lieutenant W. T. Barker.

Bequest.

The late Admiral Sir H. E. Purey Cust, K.B.E., C.B., bequeathed to the Institution his very valuable collection of Collingwood swords, medals and other relics, which have been on loan in the Museum for many years. These are permanently on view in company with the many other personal relics of famous naval commanders which are amongst the Institution's greatest treasures.

Return of Regimental Plate to the 2nd Battalion, Royal Inniskilling Fusiliers.

On the 12th January, 1938, General Sir Felix Ready, G.B.E., K.C.B., C.S.I., C.M.G., D.S.O., on behalf of the Council, handed to Lieut.-General Sir Travers Clarke, G.B.E., K.C.B., K.C.M.G., Colonel of the Royal Inniskilling Fusiliers, the Mess silver and trophies of the 2nd Battalion of that Regiment on it being re-raised in the King's Service. This Mess silver and other trophies had been cared for by the Institution since 1922 when the Battalion was disbanded. A letter was subsequently received from the Commanding Officer expressing the appreciation of his Battalion for the care which had been shown in safeguarding their possessions.

Gift to Ceylon.

It was represented to the Council that it would be greatly appreciated by the people of Ceylon if they would consider presenting or sending on long loan a highly ornamented musket which was formerly the property of King Kandy. The musket is mainly of sentimental and historical interest and it was noted that other articles of special interest to that country had been returned by Their Majesties King George V and King Edward VIII. The Council decided, therefore, to present it to the Government of Ceylon. In due course a letter was received from the Governor of that Colony expressing the deep appreciation of the people for this gift.

Loans to Empire Exhibition, Glasgow.

A number of naval and military exhibits of historical and scientific interest from the Institution's collection were lent, at the request of the authorities, to the Empire Exhibition at Glasgow.

Loan to Exhibition of XVIIth Century Art.

At the request of the Royal Academy of Arts, the bronze bust of King James I by Le Sueur was lent to the Exhibition of "XVIIth Century Art in Europe" which was held from January to March, 1938.

A letter of thanks was subsequently received from the President and Council of that body.

New Exhibits.

The Institution is indebted to generous donors for 56 gifts to the Museum during the past year. Details of these have already been published in the Secretary's Notes of the Journal.

UNIFORMS, COLOURS, STANDARDS AND EQUIPMENT OF THE BRITISH ARMY.

Satisfactory progress continues to be made in compiling the Summary of information on old Uniforms, Equipments, Standards and Colours of the Army. In the course of the past year the greater proportion of the regiments of the Indian Army have signified their desire to be associated with this work, and a large number of them have already appointed Regimental Representatives.

The Marquess of Cambridge and Mr. Godfrey Brennan, as members of the Committee of Experts under General Sir Robert Whigham, G.C.B., K.C.M.G., D.S.O., were instrumental in securing the gifts of a number of uniforms and head-dresses from the Wellcome Historical Medical Museum. These have been carefully sorted and certain duplicates not required for the Institution's collection have been offered to appropriate Regimental Museums.

Captain Donald Anderson, late Indian Army, is continuing to work on the Summary, and Regimental Representatives have been invited to communicate with him on all matters of detail connected with the work which they have so kindly undertaken.

ROYAL UNITED SERVICE INSTITUTION.

BALANCE SHEET, 31ST DECEMBER, 1938.

DR. CR.

	£ s. d.	£ s. d.
To ACCUMULATED FUND—		
Excess of Assets over Liabilities, as at 31st December, 1937	106,473 17 3	
Add: Additions to Museum Exhibits during the year, per contra	1,185 3 0	
Less: Withdrawals, per contra	595 0 0	
	590 3 0	
	107,064 0 3	
Deduct: Depreciation of Investments since 31st December, 1937	444 6 6	
	106,619 13 9	
Add: Revenue Account—Surplus per annexed Account	283 8 1	
		106,903 1 10
„ MUSEUM EXHIBITS PURCHASE FUND ..		44 4 9
„ LEASEHOLD REDEMPTION FUND		3,927 19 5
„ LIFE SUBSCRIPTION FUND		1,484 8 4
„ SUBSCRIPTIONS, ETC., PAID IN ADVANCE		187 14 0
„ CREDITORS		423 6 5
		£112,970 14 9

BERTRAM ABEL SMITH, *Chairman, Finance Committee.*
E. ALTHAM, *Secretary.*

	£ s. d.	£ s. d.
By LEASEHOLD BUILDING—Whitehall, S.W.1, at Cost (covered by Insurance for £40,000) ..		23,101 16 8
„ FURNITURE, FIXTURES, FITTINGS, BOOKS, MAPS, CHARTS, etc. (as valued for Insurance at 31st December, 1926, with subsequent additions at cost)		10,229 0 6
„ MUSEUM EXHIBITS, etc. (excluding Loan Collection)—		
As at 31st December, 1937	57,071 0 0	
Additions during the year	1,185 3 0	
	58,256 3 0	
Deduct: Withdrawals during the year ..	595 0 0	
		57,661 3 0
NOTE: The Museum Exhibits, including Loan Collection (£10,077 5s. 0d.) are covered by Insurance for £68,173 8s. 0d.		
„ LEASEHOLD REDEMPTION FUND—		
Premiums paid to 31st December, 1937, on Insurance Policies for £23,100 expiring October, 1972	3,861 15 10	
Add: Premium paid during year	66 3 7	
		3,927 19 5
„ LIFE SUBSCRIPTION FUND—		
£1,197 15s. 3d. 2½% Conversion Loan, 1944–49, at market price, 31st December, 1938 ..	1,143 17 3	
Cash at Bank on Deposit Account	340 11 1	
		1,484 8 4
„ INVESTMENTS at Market Price, 31st December, 1938—		
£1,653 16s. 2d. 3½% India Stock ..	1,484 5 10	
£14,202 16s. 0d. 3% Conversion Loan 1948-53	14,025 5 4	
		15,509 11 2
„ DEBTORS AND AMOUNTS PAID IN ADVANCE		493 5 11
„ CASH AT BANK AND IN HAND		563 9 9
		£112,970 14 9

TO THE MEMBERS OF THE ROYAL UNITED SERVICE INSTITUTION.

We have audited the above Balance Sheet dated 31st December, 1938, and have obtained all the information and explanations we have required. In our opinion such Balance Sheet is properly drawn up so as to exhibit a true and correct view of the Institution's affairs according to the best of our information and the explanations given to us and as shown by the books of the Institution.

ALDERMAN'S HOUSE,
BISHOPSGATE, LONDON, E.C.2.
9th February, 1939.

BARTON, MAYHEW & Co.,
Chartered Accountants.
Auditors.

REVENUE ACCOUNT FOR THE YEAR ENDED 31ST DECEMBER, 1938.

DR

1937.				£ s. d.	£ s. d.
£	s.	d.			
2,391	18	4	To Salaries	2,772 6 8	
1,973	1	8	,, Wages and National Insurance	1,921 0 1	
34	8	1	,, Attendants' Clothing	30 11 1	
156	10	0	,, Pensions	191 10 0	
					4,915 7 10
226	6	1	,, Museum Repairs, Sundries and Special Exhibitions		145 16 9
1,554	11	5	,, Journal Printing	1,572 9 10	
355	19	4	,, Journal Postage	361 16 6	
236	1	6	,, Literary Services	288 18 0	
36	14	10	,, Shorthand Notes	58 13 10	
					2,281 18 2
181	15	0	,, Library Purchase and Binding of Books	249 13 9	
52	11	8	,, Periodicals and Newspapers	58 4 11	
					307 18 8
19	1	6	,, Advertising	46 11 3	
1	11	6	,, Lecture Expenses	7 17 6	
					54 8 9
580	0	0	,, Ground Rent	580 0 0	
61	10	1	,, Water Rate	60 7 9	
153	5	7	,, General Rates		
98	11	4	,, Insurance	95 7 5	
					735 15 2
121	9	5	,, Fuel	134 18 5	
250	15	10	,, Lighting	255 10 0	
122	3	2	,, General Repairs	246 9 4	
			,, Restoration of Pictures	10 13 6	
126	19	9	,, House Expenses and Sundries	143 1 6	
					790 12 9
52	10	0	,, Audit Fee, 1938	52 10 0	
24	14	9	,, Legal Expenses	42 7 11	
80	10	1	,, Postages, Telegrams, etc.	97 5 5	
263	15	4	,, Printing and Stationery	178 16 3	
40	3	3	,, Telephone	39 8 4	
					410 7 11
10	1	3	,, Travelling Expenses		2 0 1
123	9	8	,, Contribution to Staff Pension Scheme		173 2 1
66	3	7	,, Leasehold Redemption Fund		66 3 7
13	4	6	,, Gold Medal for R.U.S.I. Prize Essay, 1937		13 4 6
657	2	8	,, Balance, being surplus for the year, carried to Balance Sheet		283 8 1
£10,067	1	2			£10,180 4 4

CR.

1937				£ s. d.	£ s. d.
£	s.	d.			
5,725	2	6	By Members' Subscriptions Received	5,847 11 6	
4	16	0	,, Voluntary Extra Subscriptions	4 16 0	
139	0	0	,, Life Subscriptions—Amount brought to Credit	155 10 0	
					6,007 17 6
1,561	15	6	,, Admissions to Museum	1,445 19 0	
67	15	5	,, Sales of Museum Catalogues and Pamphlets	43 19 3	
					1,489 18 3
886	4	2	,, Sales of Journal	940 0 1	
321	17	4	,, Advertisements in Journal	377 12 10	
					1,317 12 11
27	13	6	,, Profit on Repairing Regimental Colours, etc.	15 6 3	
80	9	2	,, Miscellaneous Receipts	92 3 4	
					107 9 7
502	7	7	,, Dividends and Interest Received		507 6 1
750	0	0	,, Government Grants		750 0 0
£10,067	1	2			£10,180 4 4

CHESNEY MEMORIAL MEDAL FUND.

DR. 31st DECEMBER, 1938. CR.

	£ s. d.	£ s. d.		£ s. d.	£ s. d.
To Balance of Fund at 31st December, 1937 :—			By depreciation of Investment since 31st December, 1937		9 4 0
Cash at Bankers	16 2 5		„ Balance of Fund at 31st December, 1938 :—		
Investment at Market Price	215 1 0	231 3 5	Cash at Bankers	25 2 3	
„ Dividends Received, less Tax		6 16 10	Investment at Market Price :		
„ Income Tax recovered in respect of the years 1936/37 and 1937/38		2 3 0	£230 Bengal & North Western Railway 3½% Preference Stock	205 17 0	
					230 19 3
		£240 3 3			£240 3 3

We have audited the above Statement of the Chesney Memorial Medal Fund for the year ended 31st December, 1938, and certify the same to be correct

ALDERMAN'S HOUSE,
BISHOPSGATE, LONDON, E.C.2.
9th February, 1939.

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TRENCH GASCOIGNE PRIZE FUND.

DR. 31st DECEMBER, 1938. CR.

	£ s. d.	£ s. d.		£ s. d.	£ s. d.
To Balance of Fund at 31st December, 1937 :—			By First Prize Essay	31 10 0	
Cash at Bankers	72 11 4		„ Two Second Prize Essays of £15 15s. 0d. each	31 10 0	
Investments at Market Prices	1,591 7 0	1,663 18 4			63 0 0
„ Dividends Received, less Tax		41 3 11	„ Depreciation of Investments since 31st December, 1937		180 12 10
„ Dividends Received, Gross		3 10 0	„ Balance of Fund at 31st December, 1938 :—		
„ Income Tax recovered in respect of the years 1936/37 and 1937/38		27 4 8	Cash at Bankers	81 9 11	
			Investments at Market Prices :		
			£1,862 London & North Eastern Railway 5% Debenture Stock	1,312 14 2	
			£100 3½% War Loan	98 0 0	
					1,492 4 1
		£1,735 16 11			£1,735 16 11

We have audited the above Statement of the Trench Gascoigne Prize Fund for the year ended 31st December, 1938, and certify the same to be correct.

ALDERMAN'S HOUSE,
BISHOPSGATE, LONDON, E.C.2.
9th February, 1939.

BARTON, MAYHEW & Co.,
Chartered Accountants.
Auditors

BRACKENBURY MEMORIAL FUND.

DR. 31st DECEMBER, 1938. CR.

	£ s. d.	£ s. d.		£ s. d.	£ s. d.
To Balance of Fund at 31st December, 1937 :—			By Expenditure on Books, etc.		16 13 0
Cash at Bankers	10 8 2		„ Royal United Service Institution—		
Investment at Market Price	428 8 4		Administration Fee		1 1 0
		438 16 6	„ Depreciation of Investment since 31st December, 1937		15 15 9
„ Dividends Received, Gross		14 14 8	„ Balance of Fund at 31st December, 1938 :—		
			Cash at Bankers	7 8 10	
			Investment at Market Price :—		
			£421 1s. 0d. 3½% War Loan	412 12 7	
					420 1 5
		£453 11 2			£453 11 2

We have audited the above Statement of the Brackenbury Memorial Fund for the year ended 31st December, 1938, and certify the same to be correct.

ALDERMAN'S HOUSE,
BISHOPSGATE, LONDON, E.C.2.
9th February, 1939.

BARTON, MAYHEW & Co.,
Chartered Accountants.
Auditors.

EARDLEY-WILMOT MEDAL FUND.

DR. 31st DECEMBER, 1938. CR.

	£ s. d.	£ s. d.		£ s. d.	£ s. d.
To Balance of Fund at 31st December, 1937 :—			By Depreciation of Investment since 31st December, 1937		4 17 6
Cash at Bankers	18 11 9		„ Balance of Fund at 31st December, 1938		
Investment at Market Price	114 10 0		Cash at Bankers	23 11 9	
		133 1 9	Investment at Market Price :		
„ Dividends Received, Gross		5 0 0	£100 5% Conversion Loan, 1944-64 ..	109 12 6	
					133 4 3
		£138 1 9			£138 1 9

We have audited the above Statement of the Eardley-Wilmot Medal Fund for the year ended 31st December, 1938, and certify the same to be correct.

ALDERMAN'S HOUSE,
BISHOPSGATE, LONDON, E.C.2.
9th February, 1939.

BARTON, MAYHEW & Co.,
Chartered Accountants.
Auditors.

THE CHAIRMAN'S ADDRESS

Before dealing with the Annual Report I think you may like me to summarise some of the principal events of the past year.

The adjectives " eventful " and " prosperous " well apply to this Institution during 1938. If we recall the situation last autumn we naturally use the word " eventful " to describe that critical period, and the Institution did not remain untouched by what was happening because from the 27th of September to the 10th of October the building was taken over by the War Office for a Government service.

It will also interest you to know that at that time the Council took the precaution of having the most valuable and portable articles in the Museum packed into cases which would have been removed to a place of safety out of London. Measures were also taken to safeguard other less portable exhibits as far as possible.

It is with much satisfaction that the Council are able to record the successful outcome of their litigation in connection with the exemption of the Institution from General Rates as being a Scientific and Literary Society within the meaning of the Act of 1843. It will be seen from the Report that good use has already been made of the saving thereby effected.

Our thanks are due in large measure to Colonel Josselyn and his firm, Messrs. Harrington, Noble & Company, for their good advice and the preparation of the Institution's case.

It is only fair to say that, while they felt it their duty to resist our claim, the Westminster City Council have not been at all unfriendly in the matter, and have shown a genuine interest in the Institution and what it stands for.

This exemption from General Rates follows on the exemption from Income Tax on the Institution's investments, formally granted to us in 1926 on the strength of it being a " Charitable Organization." Under the Finance Act that expression is interpreted as meaning that we are a body which exists *pro bono publico*.

This dual recognition is important, because it places the Institution and everything it stands for on an even more firm foundation.

It was with great regret that the Council received news of the death of Colonel C. H. Colvin, C.B., D.S.O., who, when he resigned in 1936, had been one of their Members for twenty-two years, Chairman of the Museum and General Purposes Committee for ten years, and a Member of the Finance Committee for fourteen years. Colonel Colvin was a very regular attendant at meetings until incapacitated by ill-health, and we owe him a deep debt of gratitude for his services to the Institution.

More lately, the Council have had to deplore the loss of another of their Members. General Sir Noel Birch, G.B.E., K.C.B., K.C.M.G., had given them his services since 1921, and had been a Member of the Museum and General Purposes Committee since 1922. To him, also, the Institution owes sincere gratitude for his unfailing support and help. Those, like myself, who knew " Curly " Birch well will remember him, above all, as a *man*.

Many old Members will be sorry to hear of the death of our old Hall Attendant, Benjamin Carpenter, who served us well and truly from 1914 until he was pensioned-off in 1933.

Now we can turn to the Annual Report. It will be convenient to take each section in turn so that Members can make any remarks they may wish to offer on the various subjects as they arise :—

Pages i to iii down to the paragraph beginning "Finance" are merely statements of fact and really call for no special comment.

Colonel Abel Smith, as Chairman of the Finance Committee, will answer any questions that may be raised on the next section dealing with Finance. (No questions were asked.)

Admiral Sir Reginald Tupper will answer any questions on the JOURNAL and Library. (No questions were asked.)

Admiral Sir William Goodenough will answer any questions on the Museum. (No questions were asked.)

I now move : " That the Report and Accounts, as circulated, be taken as read and adopted."

Colonel B. Abel Smith (Chairman of the Finance Committee) seconded the Resolution, which was carried unanimously.

RE-ELECTION OF AUDITORS

COMMANDER R. I. MONEY, R.N. moved : " That Messrs. Barton, Mayhew & Company be re-elected auditors for the ensuing year at a fee of fifty guineas."

CAPTAIN D. C. ANDERSON, late I.A., seconded the Resolution, which was carried unanimously.

THE CHAIRMAN called on Colonel J. Josselyn, C.M.G., D.S.O., O.B.E., T.D., to move the Resolution which appeared in the Agenda, amending the Bye-laws governing legibility for membership of the Institution.

COLONEL JOSSELYN explained that the amendments which it was desired to introduce would bring the Bye-laws up to date so that they will include new formations, such as Midshipmen (A), Midshipmen (E), and Paymaster Midshipmen, and all officers whose names now appear on the several official lists of officers of the Home, Dominion and Indian Fighting Services ; also, subject to recommendation by their Commanding Officers, Cadet-Midshipmen, Cadets and Paymaster Cadets of certain Dominion and Indian Instructional Establishments, not at present legislated for.

In another category it was proposed that gentlemen enrolled in certain recently formed establishments, which implied that they will be given commissions in time of national emergency—and, in particular, the Royal Naval Volunteer Supplementary Reserve and the Officers Emergency Reserve—if proposed and seconded by Members, shall be eligible for membership by ballot of the Council.

Another small alteration was the introduction of the word " Army " instead of " Force " in connection with Territorial formations.

The amendments had been carefully considered by the Council on more than one occasion, and the Council had had the advantage of the criticism and advice of the representatives of all three Service Departments so that the proposed wording should be fully comprehensive. He proposed that the amendments to the Bye-laws, Chapter 2, Paragraphs 1 and 2, as set out on the Agenda for the Meeting be adopted.

REAR-ADMIRAL H. G. THURSFIELD seconded the Resolution, which was put to the Meeting and carried unanimously.

VACANCIES ON THE COUNCIL

THE CHAIRMAN said that the following Candidates had been nominated to fill the Vacancies on the Council :—

ROYAL NAVY (1 vacancy)
Admiral of the Fleet Sir Frederick L. Field, G.C.B., K.C.M.G.

REGULAR ARMY (3 vacancies)
Major-General J. R. M. Minshull-Ford, C.B., D.S.O., M.C.
Brigadier R. P. Pakenham-Walsh, M.C.
Major-General A. F. A. N. Thorne, C.M.G., D.S.O.

TERRITORIAL ARMY (1 vacancy)
Colonel J. Josselyn, C.M.G., D.S.O., O.B.E., T.D.

ROYAL AIR FORCE (1 vacancy)
Marshal of the Royal Air Force Sir Edward Ellington, G.C.B., C.M.G., C.B.E.

THE GOLD MEDAL ESSAY COMPETITION (AIR), 1938

THE SECRETARY : " The winner of the Gold Medal of the Institution and the first Trench Gascoigne prize of thirty guineas for the 1938 Essay Competition is Lieutenant W. L. Nevill, R.A. Lieutenant Nevill is serving in Aden, and is therefore unable to be here this afternoon.

" The second Trench Gascoigne prize of twenty guineas has been won by Major C. R. A. Swynnerton, The North Staffordshire Regiment."

THE CHAIRMAN presented the prize to Major Swynnerton amid applause and congratulated him on his success.

VOTE OF THANKS TO THE CHAIRMAN

ADMIRAL SIR WILLIAM GOODENOUGH : " It is an element of strength in the constitution of this Institution that, although each year we elect a new Chairman of the Council from each Service in rotation, the policy of the Institution remains the same. It is a policy of progress, and every Chairman brings to our advancement some new qualities.

" Sir Philip Game has contributed much in his turn by his courtesy and good judgment, and the Institution owes him a great debt of gratitude. He is a very busy man, but if you want to get anything well done you should always go to a busy man, for you may be sure that he is not a lazy one.

" I beg to move that the thanks of the Institution be accorded to the retiring Chairman."

GENERAL SIR ROBERT WHIGHAM : " I wish to associate myself with all that Admiral Sir William Goodenough has just said, and to second this Resolution."

The motion was carried with acclamation.

THE CHAIRMAN, in thanking the Meeting, remarked that he was sure they would be glad to know that Admiral of the Fleet Sir Frederick Field, G.C.B., K.C.M.G., had consented to succeed him.

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THE SOCIETY FOR NAUTICAL RESEARCH

(*Founded* 1910)

Patron :

H.R.H. THE DUKE OF KENT, K.G., K.T., G.C.M.G., G.C.V.O.

THE OBJECTS OF THE SOCIETY :

To encourage research into nautical antiquities, into matters relating to seafaring and ship-building in all ages and among all nations, into the language and customs of the sea, and into other subjects of nautical interest.

The Society has erected a Monument to the Van de Veldes in St. James's, Piccadilly; raised £107,000 to save Nelson's Flagship and has superintended the restoration of H.M.S. "VICTORY" to her appearance at Trafalgar; paved the way to the establishment of a National Maritime Museum at Greenwich and a Victory Museum at Portsmouth; organised Exhibitions of Nelson Relics and Naval Prints, etc., at the Guildhall, Whitechapel, Plymouth, Birkenhead and Hull; and issued sundry periodical publications dealing with Nautical Archæology, including a cheap set of official plans (ten in number) for building a model of H.M.S. "Victory."

The annual subscription of one guinea entitles members to receive admission tickets to H.M.S. "Victory," "The Mariner's Mirror" (an illustrated quarterly journal of over 100 pages), the Annual Report (100-200 pp. illustrated); to attend the Annual Meetings, which have been held at the Royal United Service Institution, Trinity House and the Royal Naval College, Greenwich, and the Annual Lectures which have been held at the Fishmongers', Clothworkers', Salters' and Drapers' Halls and have dealt with "The Great Harry," Primitive Craft, Samuel Pepys, Coastal Craft, Harrison's Timekeepers, and Flags in Marine Art.

For particulars of membership apply to—

THE DIRECTOR, NATIONAL MARITIME MUSEUM, GREENWICH, S.E.10

The Society for Army Historical Research

THIS Society was founded in 1921, with the object of encouraging research into Army Antiquities, matters connected with Regimental Histories, Uniforms, Dress and Equipment of the past, Old Military Customs and Traditions, the Art of War in bygone days, Pictures, Prints, Medals and Relics, and similar subjects of interest.

The Society publishes a quarterly Journal and occasional Monographs, copies of which are sent, post free, to all Members.

"Notes, Questions and Replies" form a prominent feature (occupying about one-third of the Journal), with the object of fostering a spirit of enquiry into the history of the Army.

All interested in the History of the Army, civilians as well as soldiers, are invited to join and to contribute articles. Libraries, Clubs, Societies and Regiments may, through their representatives, be admitted to Membership.

Annual Subscription £1 1s. 0d.

APPLY TO THE HON. SECRETARY, c/o WAR OFFICE LIBRARY WHITEHALL, LONDON, S.W.1

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